Construction

Southern construction in May reached the highest valuation for the year so far.

May value of contracts below the Mason and Dixon line totaled $276,224,000, a forty per cent gain over the preceding month and about seven per cent more than the prior 1949 peak.

Total value of the South's construction for the first five months is $1,148,827,000, or approximately two per cent above the figure for the same period of last year.

The five-month total includes $293,395,000 for private building, $283,503,000 for public building, $244,778,000 for industrial work and $172,009,000 for highways, as well as $155,142,000 for engineering construction projects.

JUNE 1949

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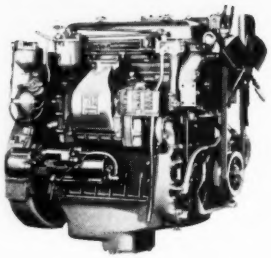
"They don't come any better."

Says Master Mechanic Ralph Stinson of Missouri Valley Construction Co.



MEN who really know—men, like Ralph Stinson, who have seen General Motors Series 71 Diesels at work—offer proof of their performance: "They hold up better and are easier to maintain than any other Diesel engine in the same horsepower range. They don't come any better," Mr. Stinson says. And he cites his records to back up his statement:

In the summer of 1946, Missouri Valley Construction Co. replaced three 3-ton dump trucks with a pair of Koehring Dumptors, powered by GM 4-71 Diesels. Since then, the two units, now quarrying limestone at Warren, Mont., have tripled production with lower fuel costs. Maintenance has been considerably lower too, Mr. Stinson reports.

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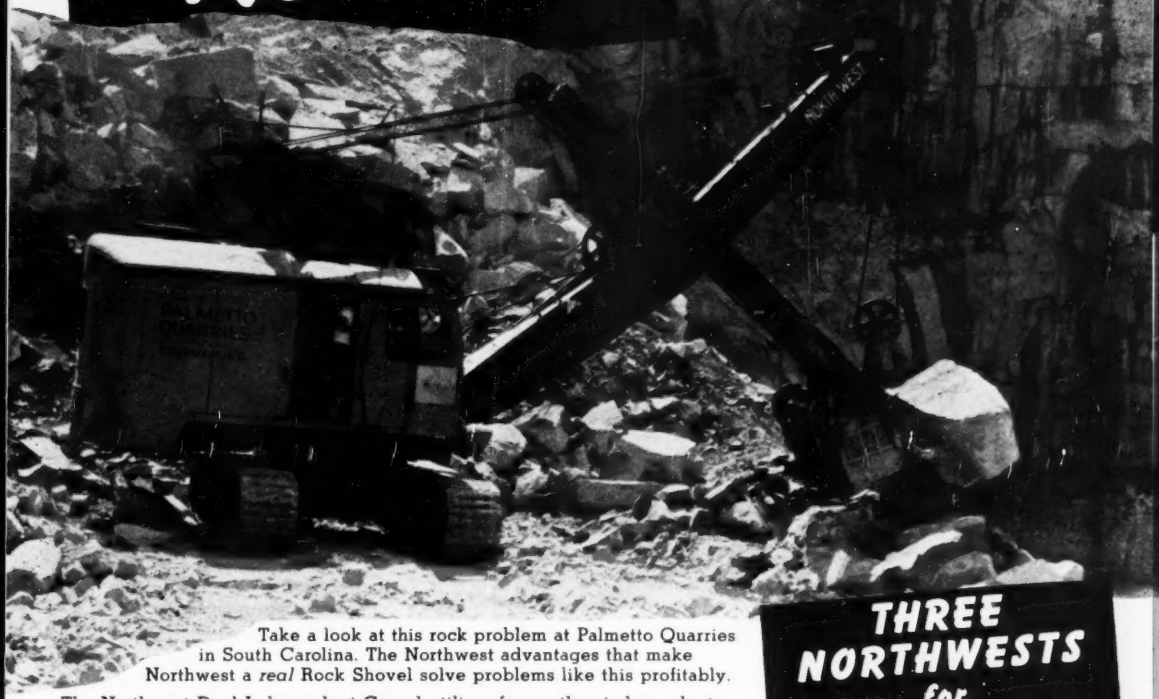

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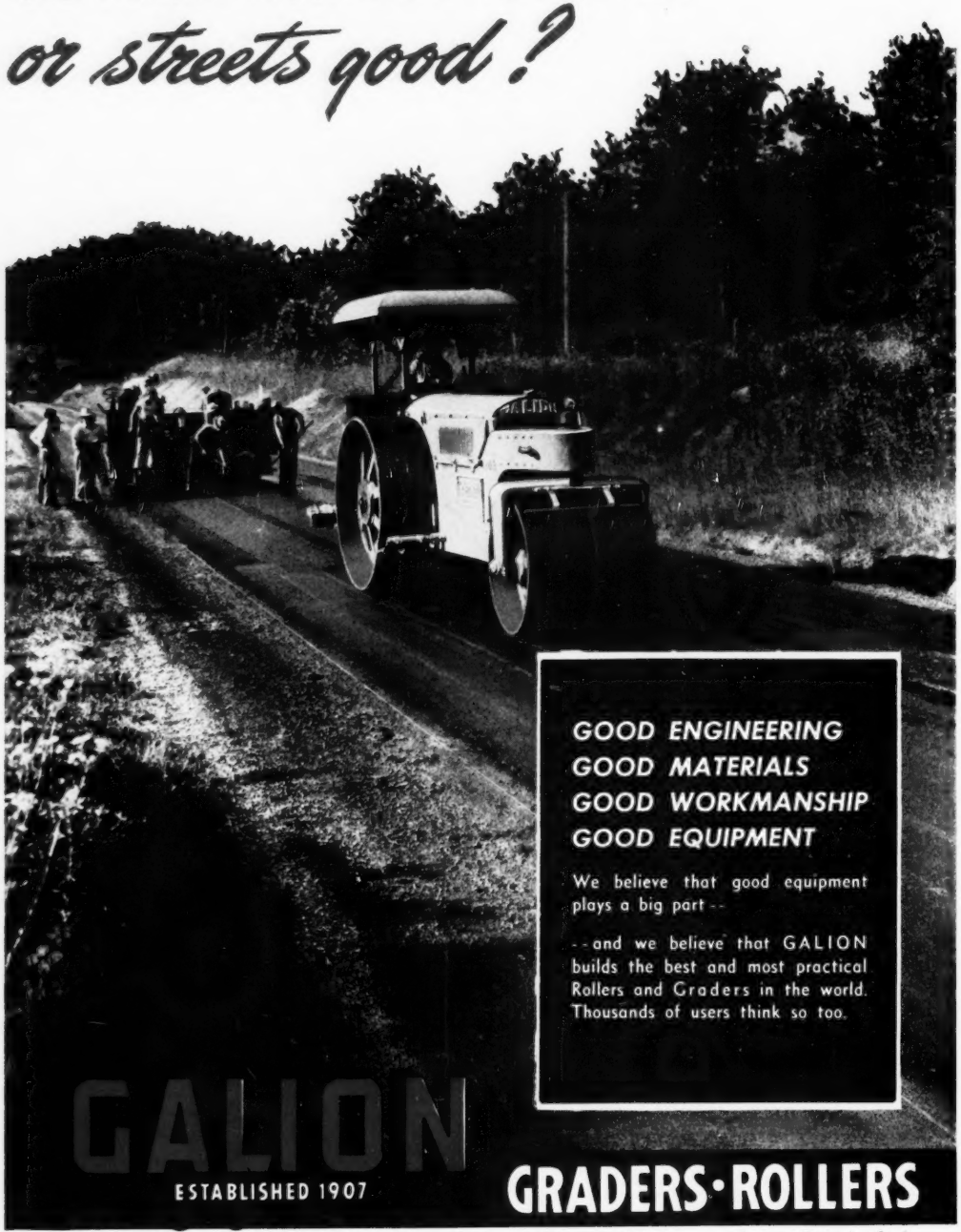

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Construction

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Pipeline Project Started

HUNDREDS of workmen from Texas to Ohio started early this month in a race to have Texas Gas Transmission Corporation's 800-mile pipe line in the ground and delivering much-needed natural gas supplies by the end of the year.

Gas deliveries through the new line by that time are expected to reach 304,000,000 cubic feet a day. Ultimate daily capacity will be 400,000,000 cubic feet.

Much of the preliminary work had been completed before the Company received its certificate from the Federal Power Commission.

As a result, construction crews were able to start as soon as the route was dry and hard enough to support heavy bulldozers, tractors and other pipe line building equipment. Large quantities of pipe and other materials for the line have been stored along the right-of-way for many months.

L. E. Ingham, vice president of Texas Gas, who is supervising construction of the line, reports that four of the eight scheduled spreads are already in the field. Eventually, they are expected to total about five to six miles a day once the work of clearing and grading the route has been completed. These crews working simultaneously, Mr. Ingham explains, will make it possible to lay the 26-inch line and install its initial horsepower before 1950.

Contracts for line's construction have been awarded to the following firms:

N. A. Saigh Co., of San Antonio, will build the line from the Carthage Gas Field in Texas to Lisbon, Louisiana.

Latex Construction Co., of Houston, is in charge of the work from Lisbon to the Mississippi River at a point below Greenville.

O. C. Whittaker Co., of Fort Worth, will build the line from the Mississippi River crossing to Lula, Mississippi. (The 63-mile section from Lula to Memphis, in Tennessee, is in the ground and in operation.)

Horrigan Construction Co., of Houston, is responsible for two spreads, covering the 210 miles between Memphis and Slaughters, Kentucky.

Williams Brothers Corp., of Tulsa, with two spreads in the field, will lay the 180 miles of pipe line from Slaughters to the Ohio River at a point near Louisville.

Midwestern Construction Co., of Tulsa, will build the final section from Louisville to the northern terminus of Lebanon, Ohio, where it will connect with the Big Inch System of Texas Eastern Transmission Corporation.

In a detailed progress report issued prior to the start of heavy construction Mr. Ingham reported that aerial and transit location surveys have been completed on the entire line.

Indicating the extent of the project, Mr. Ingham said that highway crossing permits are required for 149 highways, and a bulk of them have been secured.

The 800-mile pipe line will cross 55 railroad lines, owned by 21 different railroad companies. Most of the necessary contracts have been signed granting permission to cross the tracks.

(Continued on page 65)

Land clearing—or any 'dozer work—is a pushover for International Diesel Crawlers. International diesels have the power and stamina to ram jobs through to completion at low cost and in minimum time.

International Power, geared to the ground by earth-grabbing tracks, puts maximum pull or push into the work for efficient earthmoving.

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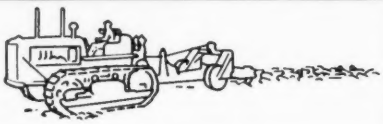

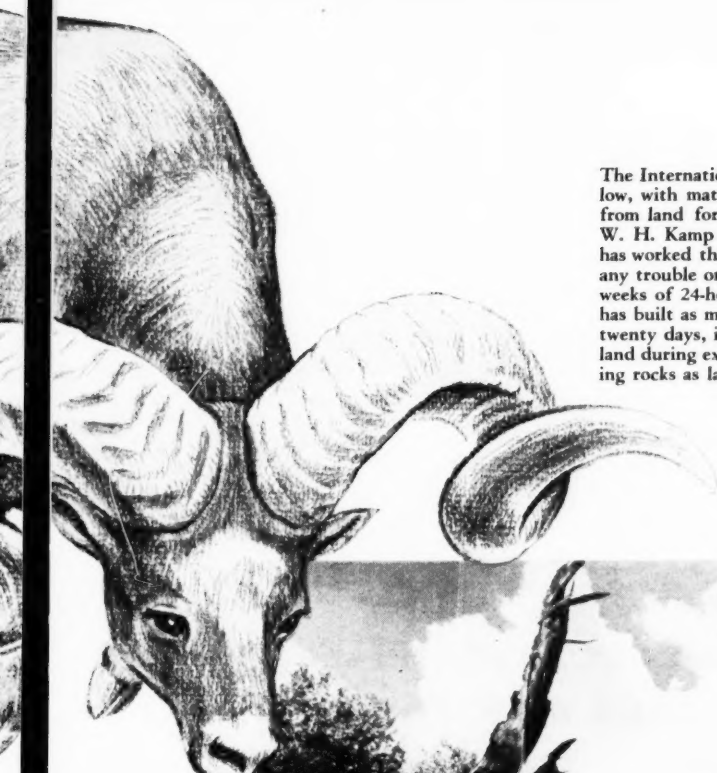

The International TD-18 Diesel Crawler, below, with matched bulldozer, clears stumps from land for a Seattle suburb. Its owner, W. H. Kamp of Des Moines, Washington, has worked this tractor for 4½ years without any trouble or repairs. It puts in seven day weeks of 24-hour days at long stretches. It has built as much as 7,000 feet of streets in twenty days, including opening and clearing land during extremely wet conditions, removing rocks as large as five tons and stumps of 10-ft. diameter. "The tractor is just as true today as a new machine," he says, "not sprung in the least and has never been off the tracks!" Quite a record for more than 10,000 hours of operation!

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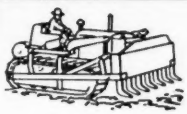
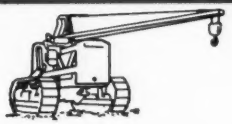
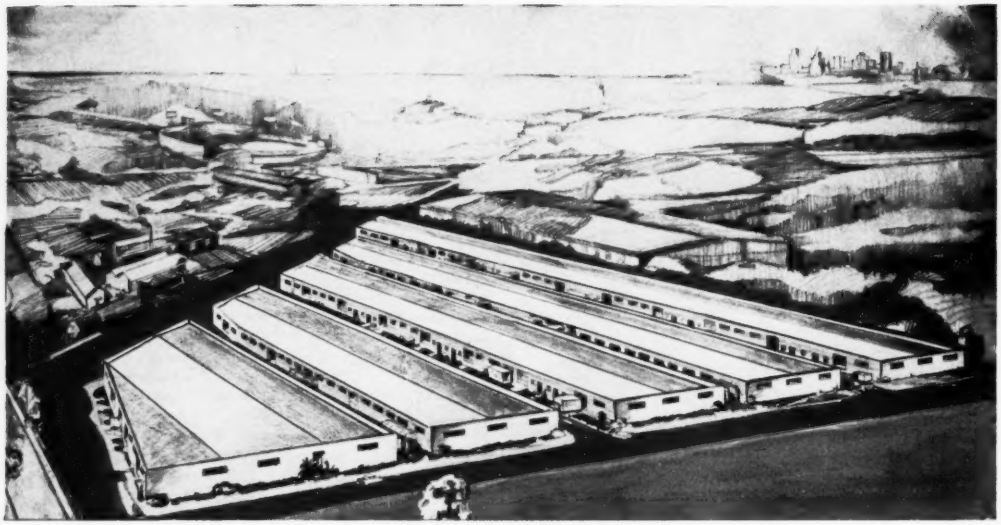






Above—Work is about to be started at Houston, Texas, by Hyman Finger on the first of five warehouse units on the Gulf Freeway. J. B. Dannenbaum is the consulting engineer.

Construction Awards in South Hit Year's Peak in May with Total of $276,224,000

CONSTRUCTION in the South reached the highest point of the year in May.

Value of contracts awarded in the sixteen states below the Mason and Dixon line during the fifth month totaled $276,224,000. This is forty-nine per cent above the total for the preceding month and about seven per cent higher than the previous 1949 peak, which occurred in January. Compared with the total for May of last year, the current May figure is slightly up. The variation is about two per cent.

Southern construction so far this year is valued at $1,148,827,000, according to compilations from the reports in the *Daily Construction Bulletin*, or practically the same as the $1,135,516,000 for the similar period of last year. The spread between the two totals is a little over one per cent.

May construction in the South embraces $70,156,000, or twenty-five per cent for industrial construction; $62,737,000 for private building and $64,565,000 for public building, the one hovering just below and the other above twenty-three per cent; $40,968,000 for engineering construction and $37,798,000 for highways, streets and bridges, both of the latter being around fourteen per cent.

Compared with the preceding month, industrial construction in May is more than six times greater. The total is $70,156,000. A new government power station in Tennessee, a gas line project in Louisiana and chemical plant expansion in Texas contributed substantially.

Private building in May, with its $62,737,000 total was eighteen per cent ahead of the $53,409,000 April counterpart. Public building also registered a gain. May projects in the contract stage totaled $64,565,000, or about fourteen per cent above the figure for the preceding month. Value of engineering construction in May was $40,968,000, or seventy-five per cent up from the April figure. Highway and bridge work was down several per cent.

The $62,737,000 for private building, as in the past, was made up mostly of residential work, which totaled $41,380,000. Assembly structures, such as churches, theatres and auditoriums, however, showed a gain of fifty per cent. Both other constituents of the private building total were up. The figure for commercial buildings was $7,082,000; for office type structures, $3,371,000.

School contracts totaled $25,312,000 in May and were up ten per cent. Other public buildings, including hospitals, were valued at $39,253,000.

All elements in the engineering construction field rose. The valuation for dams, drainage, earth work and airports totaled $19,859,000, as compared with the $7,923,000 of April. Sewer and water work was valued at $13,047,000 in May; $8,899,000 in the previous month. Federal electric projects advanced to $8,062,000 from $6,471,000 in April.

The $1,148,827,000 accumulation of values for southern construction contracts for the elapsed months of 1949 is the highest since 1942, when the figure for the first 5 months was placed at $1,867,983,000, an

SOUTH'S CONSTRUCTION BY STATES

	May, 1949		Contracts Awarded First Five Months 1949	Contracts Awarded First Five Months 1948
	Contracts Awarded	Contracts to be Awarded		
Alabama	$5,684,000	$16,250,000	$28,451,000	$85,875,000
Arkansas	11,235,000	19,934,000	19,334,000	39,838,000
Dist. of Col.	9,483,000	4,710,000	41,927,000	15,068,000
Florida	34,782,000	14,915,000	117,249,000	130,354,000
Georgia	13,365,000	10,007,000	51,578,000	49,411,000
Kentucky	4,501,000	16,749,000	18,750,000	20,346,000
Louisiana	19,974,000	32,849,000	76,836,000	97,977,000
Maryland	15,044,000	43,882,000	77,702,000	80,855,000
Mississippi	8,636,000	24,639,000	29,548,000	30,625,000
Missouri	5,283,000	64,048,000	27,533,000	60,707,000
N. Carolina	13,130,000	29,686,000	70,382,000	53,641,000
Oklahoma	9,194,000	21,702,000	44,163,000	74,347,000
S. Carolina	25,725,000	8,665,000	47,736,000	28,793,000
Tennessee	21,758,000	61,195,000	142,096,000	48,330,000
Texas	64,596,000	134,069,000	306,349,000	272,113,000
Virginia	13,247,000	18,902,000	45,091,000	44,152,000
W. Virginia	587,000	2,570,000	5,002,000	43,054,000
TOTAL	$276,224,000	$524,772,000	$1,148,827,000	$1,135,516,000

all-time record for a similar period of such activity. Thus, the current value stands as the second-highest peak for the January-May period.

Two classes of work are above the value of the first five months of last year and three are down. Industrial construction so far totals $244,778,000, representing a twenty-two per cent increase when compared with 1948 values. Current public building amounts to $283,503,000, or an increase of fourteen per cent. Private building, engineering construction and highways are down nine, eight and ten per cent, respectively.

Largest contributor to the January-May total is private building. Its $293,395,000 represents about twenty-six per cent of the accumulated total. The $283,503,000 of public building amounts to about twenty-five per cent. Industrial construction's $244,778,000 is about twenty-one per cent. The $172,009,000 of highways and bridges is fifteen per cent and the $155,142,000 for engineering construction, about thirteen per cent.

Private building for the five months includes $192,228,000, or sixty-five per cent for dwellings and other residential buildings. The balance is divided $42,342,000 for assembly type buildings; $34,780,000 for commercial buildings and $24,245,000 for office type structures. Residential and commercial buildings are down, when compared with the first five-month totals of last year.

Value of the South's industrial construction so far this year is $244,778,000. Last year at this time it was $201,877,000. The $283,503,000 for public buildings, which is sixteen per cent ahead of the value of its comparable last year's figures, includes $126,258,000 for schools and $157,245,000 for government buildings, including hospitals.

Heavy engineering construction is down. The current year's total is $155,142,000, as against $168,834,000 for the same five months of 1948. Included in work placed under contract this year is the $65,069,000 value for dams, drainage, earthwork, and airports; the $57,451,000 for sewers and water works, and the $32,622,000 for federal electric projects. Value of the dams and similar work is below the $97,319,000 for last year; however, the electric and sewer-water project values are up.

Construction costs are falling, according to a number of sources, one of which is the American Appraisal Co., which attributes a decline of eight points to 496 in its cost index to decreases in lumber costs. The index is based on a detailed analysis of materials and labor for representative types of industrial building structures.

The national average is 496. Atlanta has the highest index figure—525. Baltimore is second among twenty-two representative cities with 519. The figures for other southern cities are 474 for Kansas City, 485 for St. Louis; 466 for Dallas; 509 for New Orleans. The New York index level is 513, while Chicago's is 455. The 444 of Denver is lowest on the list.

Bookings of fabricated structural steel for April totaled 97,546 tons, it was announced late in the month by the American Institute of Steel Construction. For the first four months of this year, bookings amounted to 485,807 tons, which is twenty-six per cent less than those for the corresponding months of last year, but more than ten per cent greater than the average bookings in the same months in the five pre-war years.

The shortage of highway construction equipment seems to have largely disappeared, it was observed last month by J. S. Bright, deputy commissioner of the Public Roads Administration, who noted that the supply has been steadily improving for the past year. "Shortages which existed in the patrol grader, crawler, tractor and power shovel fields are decreasing to the extent of now being on a close to immediate delivery basis," he said.

How road bids are running may be seen from proposals received late in May by the Maryland State Roads Commission for construction of 5.490 miles of reinforced concrete surfacing on a highway west of Baltimore. Ten bids were submitted. The highest was $2,886,064, the lowest, $1,689,397. The engineer's estimate was $2,675,000.

Class I excavation on the job, which is located in Howard County, Maryland, totals 1,260,000 cubic yards, was bid at 29 cents by the low bidder to 52 cents by the sixth highest. Tamped fill prices ranged from $1.00 upward per cubic yard. Three of the six bidders had settled on $1.50. Class A reinforced cement concrete pavement 9 x 9 inches was listed in the proposal at 151,300 square yards and the bid per unit was $3.94 for the lowest proposal to $4.60 in the sixth highest.

Construction Industry Information Council, in a statement aimed at justifying present cost levels, states that residential building costs have risen only 114 per cent from 1939 through 1948, as compared with a rise of 128 per cent in the period 1914-1920 of the first World War.

"The extraordinary demand since World War II and the great inflationary pressures which have raised prices of all commodities have been counteracted to a marked extent by a great improvement in the organization, flexibility and performance of the building industry itself," declared Melvin H. Baker, chairman of the information committee.

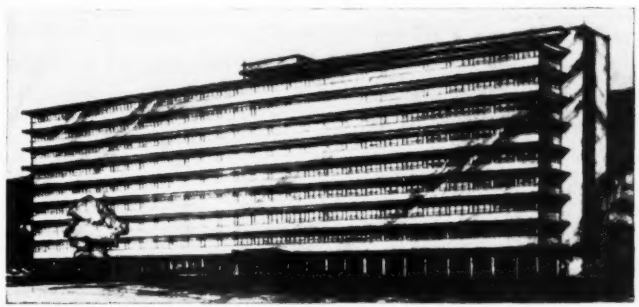
Continuing its drive against public

(Continued on page 60)

SOUTH'S CONSTRUCTION BY TYPES

	May, 1949		Contracts Awarded First Five Months 1949	Contracts Awarded First Five Months 1948
	Contracts Awarded	Contracts to be Awarded		
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$10,903,000	$17,856,000	$42,342,000	$39,300,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	7,965,000	6,950,000	34,780,000	43,352,000
Residential (Apartments, Hotels, Dwellings	41,380,000	82,822,000	192,228,000	229,279,000
Office	3,371,000	5,750,000	24,245,000	11,920,000
	$63,737,000	$89,678,000	$293,395,000	$324,251,000
INDUSTRIAL	$70,158,000	$197,230,000	$244,778,000	$201,877,000
PUBLIC BUILDING				
City, County, State, Federal and Hospitals	$39,253,000	$52,474,000	$157,245,000	$103,180,000
Schools	25,312,000	64,822,000	126,258,000	145,441,000
	$64,565,000	$117,456,000	$283,503,000	$248,630,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	$19,859,000	$36,418,000	$65,069,000	$97,319,000
Federal, County, Municipal Electric	8,062,000	20,094,000	32,622,000	24,867,000
Sewers and Waterworks	13,047,000	13,490,000	57,451,000	46,648,000
	$40,968,000	$90,008,000	$155,142,000	$168,834,000
ROADS, STREETS, BRIDGES	$37,798,000	$100,380,000	$172,009,000	$191,824,000
TOTAL	$276,224,000	$534,772,000	$1,148,827,000	$1,135,516,000

Below—Expansion at the Catawba Sanatorium, at Roanoke, Va., will involve nearly $1,500,000. A preliminary perspective of the building is shown here. Architects are Brown, Wells & Meagher, of Roanoke.



Spend Wisely, Build Wisely

The annual total of special taxes levied against highway users during 1948 amounted to the staggering total of $3,300,000,000. More than half of this sum was collected from imposts on gasoline by state and federal governments.

Bulk of taxes on motor fuel is paid to the states to be expended for highway purposes, but the federal government also exacts an excise of 1½ cents per gallon on gasoline for general revenue purposes. This federal gasoline tax cost the highway users almost half a billion dollars during the 1948 calendar year.

The states are now collecting about $2,000,000,000 annually in gasoline taxes and motor vehicle fees from motor vehicle owners. In addition to peak receipts which are pouring into the state coffers from these levies, the states as a whole, at the last report, had accumulated balances aggregating about one billion dollars in their highway funds. To these funds may be added unexpended federal highway aid of almost $1,500,000,000 still to be placed under construction as of December 31, 1948, including the second year's authorization under the 1948 act. It is obvious, therefore, that the states generally have several billion dollars on hand or in sight for highway expenditures from present taxes and other sources.

With this tremendous sum available for road building the task of investing it intelligently in roads that will serve the public adequately in the future is a challenge to the best engineering ingenuity in the several states.

Unit Prices—Maryland Reinforced Concrete Surfacing

Contract HO 234-1-315, F.A. Project FI-449 (7), 5.490 miles of reinforced concrete surfacing along U. S. Route 40 beginning at Pine Orchard and extending northwesterly to West Friendship. Unit prices for the four lowest bidders are shown.

Description	Quantities		T. E. Ritter Corp. Norfolk, Va.		Nello L. Teer Co. Durham, N. C.		REA Construction Co., Charlotte, N. C.		A. B. Burton Co., Inc., Lynchburg, Va. & Hechler Bros., Inc. Richmond, Va.	
			Unit Price	TOTAL	Unit Price	TOTAL	Unit Price	TOTAL	Unit Price	TOTAL
Clear. and Grub.	Lump Sum			$ 20,000.00		$ 25,000.00		$ 44,000.00		20,000.00
Cl. 1 Excav.	1,260,000	cu. yd.	$ .29	365,400.00	$ .32	403,200.00	$ .40	504,000.00	$ .35	441,000.00
Cl. 2 Excav.	20,500	cu. yd.	.60	12,300.00	1.75	35,875.00	1.00	20,500.00	1.75	35,875.00
Cl. 5 Excav.	3,200	cu. yd.	1.00	3,200.00	1.50	4,800.00	1.00	3,200.00	1.50	4,800.00
Borrow Excav.	38,000	cu. yd.	.40	15,200.00	.42	15,960.00	.65	24,700.00	2.25	85,500.00
Tamped Fill	13,200	cu. yd.	1.00	13,200.00	1.00	13,200.00	1.50	19,800.00	2.00	26,400.00
Trim. Ex. Ditches	200	Lin. Ft.	.50	100.00	.50	100.00	.20	40.00	.60	120.00
Removal Ex. Masonry	5	cu. yd.	10.00	50.00	10.00	50.00	10.00	50.00	12.50	62.50
Sub-base, Type 2	36,500	cu. yd.	1.50	54,750.00	2.50	91,250.00	1.85	67,525.00	2.25	82,125.00
Mac. Base Course, 3" depth	200	sq. yd.	1.25	250.00	1.70	340.00	1.00	200.00	2.25	450.00
Mac. Base Course, 5" dep.	1,900	sq. yd.	1.50	2,850.00	1.75	3,325.00	1.70	3,230.00	2.50	4,750.00
Stab. Sders.	40,600	sq. yd.	.45	18,240.00	.85	34,510.00	.58	23,548.00	.35	14,210.00
Gray. Surf. Cse. Entr. & Road Approach	8,100	sq. yd.	.60	4,860.00	.90	7,290.00	.60	4,860.00	.60	4,860.00
Calcium Chloride	50	Ton	40.00	2,000.00	60.00	3,000.00	50.00	2,500.00	70.00	3,500.00
Pen. Mac. Surf. Cse. (Mac. Aggreg. Type) 3" depth	2,100	sq. yd.	1.25	2,625.00	1.10	2,310.00	1.00	2,100.00	1.00	2,100.00
Bit. Material Pen. macadam	5,000	gal.	.20	1,120.00	.20	1,120.00	.17	952.00	.20	1,120.00
Bit. Con. Spec. B, 2" Surf. Crs.	100	Ton	20.00	2,000.00	20.00	2,000.00	13.00	1,300.00	18.00	1,800.00
Rein. Cem. Con. Pav. 10"x9" dep. Air Entr. Por. Cem. Cl. A Con.	151,300	sq. yd.	3.94	596,122.00	4.28	647,564.00	4.32	653,616.00	4.10	620,330.00
Rein. Cem. Con. Pav. 9"x9", Air Entr. Por. Cem. 01.X Con. E. S.	13,500	sq. yd.	4.22	56,970.00	4.58	61,830.00	4.80	64,800.00	4.30	58,050.00
Pl. Cem. Con. Pav. 9"x9" depth Air-Entr. Por. Cem. Cl. A Con.	1,300	sq. yd.	3.64	4,732.00	4.08	5,304.00	4.50	5,850.00	4.00	5,200.00
Pl. Cem. Con. Pav. 5"x9" dep. Air-Entr. Por. Cem. Cl. X Con. E. S.	3,150	sq. yd.	3.92	12,348.00	4.28	13,482.00	5.00	15,750.00	4.20	13,230.00
Pl. Cem. con. Pav. 5"x5" depth Air-Entr. Por. Cem. Cl. A Con.	50	sq. yd.	2.75	137.50	4.00	200.00	4.00	200.00	3.50	175.00
18" ACCM Pipe	176	lin. ft.	3.70	651.20	5.00	880.00	4.00	704.00	3.30	580.80
24" ACCM Pipe	140	lin. ft.	5.20	728.00	7.00	980.00	5.50	770.00	5.00	700.00
18" Rein. Conc. Pipe	1,927	lin. ft.	3.20	6,166.40	4.25	8,189.75	3.65	7,033.55	3.80	7,322.60
24" Rein. Conc. Pipe	3,281	lin. ft.	4.75	15,584.75	5.50	18,045.50	5.20	17,061.20	6.00	19,686.00
30" Rein. Conc. Pipe	636	lin. ft.	9.00	5,724.00	9.50	6,042.00	10.40	6,614.40	11.75	7,473.00
42" Rein. Conc. Pipe	454	lin. ft.	12.00	5,448.00	14.00	6,356.00	14.20	6,446.80	14.75	6,696.50
48" Rein. Conc. Pipe	210	lin. ft.	14.10	2,961.00	16.00	3,360.00	17.25	3,622.50	18.75	3,937.50
54" Rein. Conc. Pipe	240	lin. ft.	17.40	4,176.00	21.00	5,040.00	20.25	4,860.00	23.75	5,700.00
60" Rein. Conc. Pipe	180	lin. ft.	21.40	3,852.00	24.00	4,320.00	24.50	4,410.00	27.75	4,995.00
66" Rein. Conc. Pipe	530	lin. ft.	25.00	13,250.00	27.00	14,310.00	28.10	14,893.00	33.15	17,887.50
72" Rein. Conc. Pipe	500	lin. ft.	31.00	15,500.00	30.00	15,000.00	34.00	17,000.00	42.75	21,375.00
78" Rein. Conc. Pipe	687	lin. ft.	37.20	25,556.40	35.00	24,045.00	43.30	29,747.10	52.75	36,239.25
24 x 18" Rein. Conc. Pipe, T Sec.	6		37.60	225.60	70.00	420.00	50.00	300.00	50.00	300.00
36 x 18" Rein. Conc. Pipe, T Sec.	1		53.80	53.80	80.00	80.00	48.00	48.00	65.00	65.00
54 x 18" Rein. Conc. Pipe, T Sec.	1		105.25	105.25	150.00	150.00	110.00	110.00	125.00	125.00
78 x 18" Rein. Conc. Pipe, T Sec.	1		278.20	278.20	225.00	225.00	220.00	220.00	300.00	300.00
42 x 24" Rein. Conc. Pipe, T Sec.	1		70.30	70.30	90.00	90.00	80.00	80.00	90.00	90.00
66 x 24" Rein. Conc. Pipe, T Sec.	1		150.50	150.50	150.00	150.00	140.00	140.00	185.00	185.00
72 x 24" Rein. Conc. Pipe, T Sec.	1		201.00	201.00	200.00	200.00	190.00	190.00	225.00	225.00
18 x 11" ACCMP, Int. Base	230	lin. ft.	3.70	851.00	5.25	1,207.50	4.00	920.00	3.30	759.00
22 x 13" ACCMP, Int. Base	48	lin. ft.	4.00	192.00	6.00	288.00	6.50	312.00	4.25	204.00
29 x 18" ACCMP, Int. Base	40	lin. ft.	5.80	232.00	8.00	320.00	6.50	260.00	5.75	230.00
Rem. Old Pipe Culv.	200	lin. ft.	2.00	400.00	1.00	200.00	2.00	400.00	3.00	600.00
Reid. Old Pipe Culv.	200	lin. ft.	3.00	600.00	1.00	200.00	1.00	200.00	3.00	600.00
Spirals, Bridge Sta., 228+	1,370	lb.	.65	890.50	.70	959.00	.60	822.00	.55	753.50
Cl. A Conc. using, Reg. Cem. Br. Sta., 228+	1,800	cu. yd.	50.00	90,000.00	42.50	76,500.00	44.75	80,550.00	63.00	113,400.00
Cl. A C. Pipe Endwalls, us. Cl. A Con. Air-Entrain.	365	cu. yd.	60.00	21,900.00	70.00	25,550.00	65.00	23,725.00	60.00	21,900.00
Rein. Steel Bars	201,000	lb.	.10	20,100.00	.10	20,100.00	.10	20,100.00	.12	24,120.00
Fab. Struc. Steel, Bridge Sta.	L. S.		—	28,000.00	—	26,000.00	—	23,000.00	—	28,500.00
Expans. Mat. in Bridge	L. S.		—	500.00	—	1,000.00	—	1,100.00	—	700.00
Dampproof Bridge	L. S.		—	1,050.00	—	1,250.00	—	1,000.00	—	2,250.00
Selected Backfill	975	cu. yd.	2.50	2,437.50	3.00	2,925.00	3.25	3,168.75	3.50	3,412.50
Stone Backfill	300	cu. yd.	6.00	1,800.00	5.00	1,500.00	5.00	1,500.00	9.00	2,700.00
6" Perf. Pipe Under.	4,600	lin. ft.	1.40	6,440.00	1.50	6,900.00	1.30	5,980.00	1.25	5,750.00
8" Perf. Pipe Under.	12,000	lin. ft.	1.70	20,400.00	1.80	22,840.00	1.65	19,800.00	1.50	18,000.00
6" Underdr. Pipe Outlets	250	lin. ft.	1.40	350.00	2.00	500.00	1.30	325.00	1.25	312.50
8" Underdr. Pipe Outlets	500	lin. ft.	1.65	825.00	2.50	1,250.00	1.65	825.00	1.50	750.00
10" Underdr. Pipe Outlets	400	lin. ft.	2.00	800.00	2.75	1,100.00	2.30	920.00	2.25	900.00
Aggreg. Backfill for Under.	3,200	cu. yd.	5.50	17,600.00	4.50	14,400.00	4.75	15,200.00	5.00	16,000.00
8" x 6" Underdr. Pipe "Y" Branch or Lateral (45°)	242		11.40	2,758.80	14.00	3,388.00	12.00	2,904.00	15.75	3,811.50
8" x 8" Underdr. Pipe "Y" Branch or Lateral (45°)	45		11.70	526.50	17.50	787.50	12.50	562.50	15.75	708.75
10" x 8" Underdr. Pipe "Y" Branch or Lateral (45°)	3		13.40	40.20	20.00	60.00	13.50	40.50	20.00	60.00
10" x 8" Under. Pipe Reducer	1		9.70	9.70	25.00	25.00	11.00	11.00	10.00	10.00
6" Underdr. Pipe Elbow, 90°	1		6.80	6.80	10.00	10.00	7.50	7.50	5.75	5.75
8" Underdr. Pipe Elbow, 45°	4		7.70	30.80	12.00	48.00	8.00	32.00	6.75	27.00
10" Underdr. Pipe Elbow, 45°	3		10.40	31.20	15.00	45.00	10.00	30.00	8.75	26.25
24" R. C. Pipe Elbow, 45°	3		35.30	107.70	25.00	75.00	35.00	105.00	39.75	119.25
18" R. C. Pipe Elbow, 90°	9		23.60	212.40	20.00	180.00	25.00	225.00	24.75	222.75
24" R. C. Pipe Elbow, 90°	2		35.90	71.80	25.00	50.00	35.00	70.00	39.75	79.50
Pl. Cem. Con. Gutter, 5" us. Air Entr. Por. Cem. Cl. A. Conc.	3,200	sq yd.	4.00	12,800.00	4.50	14,400.00	5.25	16,800.00	4.00	12,800.00
8" Pl. Cem. Con. Gutter, us. Air Entr. Port. Cem. Cl. A Conc.	700	sq. yd.	5.00	3,500.00	5.50	3,850.00	6.00	4,200.00	5.00	3,500.00
Pl. Cem. Curbing & Gutter, us. Air Entr. Por. Cem. Cl. A Con.	4,200	lin. ft.	2.50	10,500.00	3.00	12,600.00	2.20	9,240.00	2.50	10,500.00
Con. Curb, 6" x 20", type B, us. Air Entr. Port. Cem. Cl. A Con.	5,000	lin. ft.	1.25	6,250.00	3.00	15,000.00	1.80	9,000.00	1.80	9,000.00
Guard Rail, St. Posts	19,548	lin. ft.	1.30	25,412.40	1.35	26,389.80	1.32	25,803.36	1.45	28,344.60
Guard Rail at Bridge	110	lin. ft.	2.00	220.00	2.25	247.50	3.00	330.00	3.75	412.50
Remove, Salvag. Guard Rail	147	lin. ft.	.30	44.10	.75	110.25	.50	73.50	.50	73.50
End Anchorages	72		47.50	3,420.00	50.00	3,600.00	50.00	3,600.00	55.00	3,960.00
Intermed. Anchorages	10		95.00	950.00	100.00	1,000.00	100.00	1,000.00	100.00	1,000.00
Type E Inlet	3		150.00	450.00	140.00	300.00	350.00	1,050.00	250.00	750.00
Special H Comb. Inlet	12		250.00	3,000.00	150.00	1,800.00	400.00	4,800.00	300.00	3,600.00
K Inl. Grate & Fitt. Type A	39		150.00	5,850.00	50.00	1,950.00	75.00	2,925.00	250.00	9,750.00
K Inl. Grate & Fitt. Type C	1		150.00	150.00	75.00	75.00	85.00	85.00	250.00	250.00
Maint. of Traffic	L. S.		—	3,000.00	—	1,000.00	—	5,000.00	—	5,000.00
Top Soil 4" depth on Slopes	330,000	sq. yd.	.15	49,500.00	.18	59,400.00	.14	46,200.00	.16	52,800.00
Top Soil 6" depth on Parkway	165,000	sq. yd.	.075	12,375.00	.25	41,250.00	.18	29,700.00	.20	33,000.00
Seeding (Park Area)	1,470	MSF	8.00	11,760.00	5.00	7,350.00	10.00	14,700.00	14.00	20,580.00
Seeding, Mulching	330,000	sq. yd.	.08	26,400.00	.10	33,000.00	.10	33,000.00	.12	39,600.00
Sodd'ng	5,400	sq. yd.	.75	4,050.00	.75	4,050.00	.80	4,320.00	.70	3,780.00
Removal of buildings	L. S.		—	500.00	—	1,000.00	—	600.00	—	2,500.00
R.-of-W. Markers	175		5.00	875.00	5.50	962.50	4.00	700.00	4.00	700.00
TOTALS				$1,689,397.30		$1,918,556.30		$1,994,092.86		$2,048,353.50

Building Codes and the Community

by
George N. Thompson

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If you had been present in this city in the year 1825 and had picked up your copy of the *New York Mirror* and the *Ladies Literary Gazette* to read over your morning coffee, you might have come across this item:

It is astonishing how carelessly buildings are erected in this city. Six houses which were nearly finished in Reed Street fell to the ground and broke three ribs of one of the workmen—this is the second time these houses have fallen—we understand that the thickness of the walls was that of only one brick!

That item tells us the reason why we have building codes. Down through the years, experience has shown that there will always be a small number of people in the construction industry — a very small number but one that must be controlled—who either through ignorance or carelessness, or unscrupulousness, are likely to endanger the lives of their fellows. We can't permit that sort of thing to go on and so we try to set forth in building codes the very least that designers and builders must do in order to assure safety. It is not pleasant or easy to set the minima to be observed, but the job has to be done. It has to cover such things as protection against fire and collapse, provision of adequate exit facilities, and other matters, which, if not properly covered, would leave the way open to loss of life and personal injury. We still have such events, but they would be far greater in number if the community did not step in to protect its members.

Behind Scenes Picture

I have said that the document in which the requirements are presented is dull. That is the inevitable result of having to set forth technical requirements in legal language. There is no way of getting around this and so the effect is not very interesting to the average reader. If you get behind the language, however, and try to visualize what it is attempting to do, you get quite a different picture. Six hundred and two persons struggling in vain to get out of the burning Iroquois Theatre in Chicago, one hundred and forty-five shrieking girls beating in vain against the locked doors of the Triangle Shirtwaist Factory in New York while fire engulfed them, four hundred and ninety-two people suddenly transformed from carefree celebrants to casualties in the Cocoanut Grove Night Club in Boston, and one hundred and sixty-eight men, women, and children dying in the Ringling Brothers Circus at Hartford three years ago are not things that can be dismissed with indifference. They constitute the drama that lifts the subject out of the drab and dreary recitation of technical requirements into one that pulses with all the fear and agony that goes with great catastrophes.

So universal is the appreciation that everything possible must be done to prevent such occurrences that more than two thousand cities and towns have adopted building codes. They do this because, with the exception of a few states, such matters are left to the municipalities—in other words to the community in which you are interested. So a very real responsibility rests with the individual community to adopt the very best regulations that can be produced in order that its citizens may have reasonable protection.

Code Change Problems

The very fact that the matter is in most cases left to the individual communities is the reason for one of the problems that affect code improvement. Not every community gets around to writing a code at the same time and so the information that is used in writing the code reflects the state of knowledge at the time of its preparation. As a result, we have a good many codes in this country that could stand a reexamination because of their advanced age. A summary of the situation is a follows:

Age Group	*Number of Cities*	*Percentage*
Up to 5 years	574	27
6 to 10 years	366	17
11 to 15 years	244	11
16 to 20 years	377	18
21 to 25 years	327	15
Over 25 years	264	12
Total dated codes	2,152	100

Now the fact that a code bears a date fifteen or twenty years ago does not necessarily indicate that it is a poor code. There may have been amendments made from time to time that have kept it reasonably up to date. But there is also the chance that it has fallen behind what you, as forward-looking members of your communities would like to see. If it has so fallen behind, several things may have happened. (1) the citizens of your community may not be getting the degree of protection which modern standards can afford them, (2) it may not be possible to use commonly known materials as efficiently and economically as it is possible to use them, and (3) there may be difficulties imposed to the introduction of new materials and methods. Any one of these considerations would justify some thought on your part.

Earnest Studies Made

Do not make the mistake, however, of assuming that nothing has been done to provide means for improving local codes where the will to do so is present. A large amount of very earnest study has been given to the subject and recommendations are available that can be used to check your local requirements. These can be obtained at very little expense and trouble. The availability of such material is one of the hopeful features of the code situation.

You will readily see that in order to do the job effectively, certain landmarks have had to be established. These include means for identifying the quality of materials, for determining the allowable working stresses, for ascertaining probable fire resistance, and so on. This range of information is quite beyond the capacity of any single individual, or even organization, to produce. Every recommended or local building code has to draw upon a vast amount of information that has been slowly and laboriously developed by professional societies, research laboratories, standardizing bodies, and other sources. Acknowledgment of this debt is one of the points that should be made in any serious discussion of the building code problem. When you read an announcement that such and such an organization has produced a new recommended building code do not conclude that a completely original job has been done. Examination will disclose that to a very large extent it is an assembly job in which the recommendations of various other bodies have been incorporated.

Quality of Materials

For example, as has been said, one basic necessity in code writing is to identify the quality of materials that are permitted or restricted in various ways. Unless there were some such system of tying requirements to definite qualities, enforcement would become very difficult. The standard specifications of the American Society for Testing Materials form the chief reliance of code writers for this purpose. In announcements of progress on building codes you never see the name of this organization featured, since it does not concern itself with the issuance of building code requirements themselves. Yet its activities and its progress are vital to the successful prosecution of building code work.

Recommendations Numerous

Similarly, the studies and recommendations of a large number of other organizations are employed in whole or in part whenever building code requirements are prepared. It would be foolish to duplicate the fine work that these organizations have done and it would be fatal to ignore them. The point to remember is that when we speak of progress in building codes, we mean progress not only in the end product but also in the background work that is being performed.

Let me give you another illustration of this interdependence of work in the building code field. We hear much today of the so-called performance bisis. By this is meant a system of code requirements expressed in terms of desired results rather than in those of specific materials and dimensions. Some rather glib statements and easy generalities are made about this performance basis as a cure-all of defects in building regulations. To make it work, a great deal of groundwork has to be done. Perhaps the most

successful application of the basis is in the field of fire protection requirements. Here we have the essential ingredients—a standard test method and accurate knowledge of what takes place in actual building fires. For instance, it is fairly well established that the destructive effect of a fire in a residential occupancy is of the order of one hour as established under the standard fire test. If you provide protection of structural members sufficient to provide an hour resistance under the test, you are reasonably certain that the structure will stand up. So, by testing various kinds of thicknesses of material and finding what will last one hour in the test you provide yourself with a list of protections any one of which will do the job. This is a rational way of going about the problem.

The significant thing, however, is that neither the American Society for Testing Materials that developed the test nor the National Bureau of Standards which carried out a series of burn-out tests in typical occupancies and so provided the basis for correlation between test method and actual fires, appears in the picture as the author of code requirements on the subject. They did, however, provide the necessary data on which current code requirements are based.

Progress Cited

So when we speak of progress in code requirements we mean something more than the fact that the National Board of Fire Underwriters and the Building Officials Conference of America are bringing out new or revised recommended building codes this year and that the Pacific Coast Building Officials Conference will do so next year. We mean more than that a series of building code standards continues to flow out of the work of the American Standards Association and that great cities like Cleveland and Chicago are struggling with major revisions of their local building codes. We mean that the sum total of work by scores of organizations is building up information that will continue to make profound changes in the way we regulate building construction.

You may ask why, if all this work is going on and new recommendations are appearing, building codes in general continue to be described as "antiquated and outmoded." Some of this sort of talk consists of easy generalizations unsupported by any read investigation. It must be admitted that statistics of the age of local codes in current use do present an unfavorable picture.

Legal Difficulties

The problem here passes, however, from production to distribution and centers on the disposition of local committees to put off the over-hauling of their codes for various reasons. One of the reasons for this inaction has its roots in legal rather than technical difficulties. A great many State laws require that recommended codes and standards such as have been described may not be adopted simply by reference but must be printed in full as many as three times in local newspapers in order to advise the public with what it is expected to comply. The principle is a long-standing and excellent one but it leads to considerable expense when so bulky a document as a building code or other publication proposed to be used in conjunction with it must be spread out in fine print over many pages. There is a serious attempt on foot at present to shorten codes and eliminate much printing cost through permitting the adoption of recommended codes and standards by reference. If this succeeds, much will have been accomplished in getting prompt acceptance of new ideas.

You will be told that many building codes make no provision for acceptance of new materials and new methods of construction. To some extent this is true. Most codes, however, contain a treatment of this subject and the number is increasing. The recommended codes and standards also deal with the problem and their suggested provisions can easily be picked up. The trouble is not so much in the lack of specific provisions as it is in how to apply them. They permit approval on submittal of adequate evidence in the form of results of test and otherwise that the proposed construction is safe or is the equivalent of constructions already in general use. We need more standard methods of testing and better information on how to evaluate the results of tests. If such helps can be supplied, building officials may be expected to reduce some of the caution that they have shown in exercising powers already granted them in the codes. Such caution is understandable when you realize that they often have a very inadequate basis for making determinations and must steer a true course between over-enthusiastic claims and their sworn duty to protect the public.

No Ready Answer

Building code requirements do not apply at all to many things which enter into the cost of a building. They are concerned only with matters affecting safety. To form an estimate of savings, some base would have to be chosen with which the more than two thousand local codes would have to be compared. These two thousand codes in turn contain hundreds of items. The items would have to be weighted in importance. No doubt the relative amount of construction in each municipality would also have to be considered.

The problem is so intricate that we who are concerned with technical improvement do not feel able to give a ready answer. One thing is certain, that progress in codes will not always mean reductions in requirements, as is often assumed. There will be numerous cases where local requirements fall below current standards. The acceptable modern code will be one in which many factors have been adjusted, some upward and some downward, to bring them into line with the provisions of the agreed base.

The true measure of whether codes continue to improve seems to be in whether they perform their function of providing reasonable safety for those in and about buildings. You like to have your minds at ease as to your safety from fire, from collapse, and from other conditions that might imperil you. When you go home today, you want like peace of mind as to yourself and your family. The same holds true when you attend a movie and work in an office or factory. There have been a number of code provisions in the past that have been found to work too rigorously and to require excessive amounts of material. Quite properly they have been changed after thorough study. There are proposals for further changes, chiefly in the nature of reductions in requirements, that quite conceivably may be put into effect without danger to building occupants. But somewhere along the line a point is reached where any further proposals for reduction represent too great a chance to take.

Examples of Changes

Specific examples of changes that have taken place over a period of time may help you to visualize some of the technical problems involved and to assess their economic importance. Thicknesses of brick dwelling house walls have been reduced quite generally from twelve to eight inches. Allowable stresses for structural steel have been raised from sixteen to eighteen and in many cases to twenty thousand pounds per square inch. Fire protection around structural members has been changed from arbitrary thicknesses of specific materials to definite fire ratings under standard conditions. Requirements for means of egress have been made more logical.

All these are major trends rather than universal changes, for two thousand separately adopted local building codes are not all modified over night. They do, however, represent substantial advances over past requirements and they have been accompanied by a large number of minor refinements.

There are also a number of proposed changes in process of development which will become available as soon as agreement can be reached among competent authorities. These include such things as allowable undivided areas in buildings, assumed wind pressures for use in design, and procedure in designing foundations to prevent settlement.

In summary, I would like to say that very great progress has been registered in the improvement of building codes. It has been accomplished through no one organization and indeed often through organizations whose names never appear in the picture unless perhaps in the form of some brief reference. It is a progress that is continuing today through laboratory research, the deliberations of professional and technical organizations, the issuance of standards, and the publication of successive editions of recommended codes by building officials, fire protection interests, and others.

Such recommended codes still differ considerably but the area of difference is steadily decreasing through common use

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Building Codes and the Community

(Continued from page 13)

of the same basic material. Ways of introducing this basic material either directly or through recommended codes into local regulations are being developed. This should make it possible for local authorities to overcome some of the difficulties of code revision under which they now labor.

I hope you will take home with you a somewhat different impression than that which may have been created in your minds by some popular writings on the subject. It is true that many local codes could be improved. It is not true, however, that nothing is being done about it either because of lack of information or because of indifference of those in authority. There are literally hundreds of qualified people who are striving earnestly to find the right answers to the many problems involved, who realize the seriousness of dealing with matters of public safety, and who can be counted upon to produce recommendations worthy of general confidence. There is a great deal yet to be done but much has already been accomplished. Such work may conceivably make a substantial contribution toward reduction of building costs. It will certainly make an outstanding contribution to human safety.

Recommendations to Speed Quonset Erection

WARRANT Officer Sandy Harrison did a lot of thinking while he was erecting Quonsets during the war. He now passes on to others the results of his experience.

When a man does the same job over and over again, he either becomes a human mechanism with a set pattern of movement, or he uses his eyes and brain to find out better or quicker ways of doing the work. With the Seabees it was customary to think with the job.

Here are some of the inspirations that filtered down between the plates of the Quonsets while we erected them.

Use speed bolts in the frame of a hut instead of standard machine bolts because: (a) There is less chance of the threads becoming burred up in shipping and handling before they are used. There is a lot of valuable time lost filing and making such bolts usable. With the much coarser thread on a speed bolt this would be eliminated. (b) In a cold climate there is less chance of the coarser thread on a speed bolt becoming gummed up with ice.

When working with gloves on it is much easier to start a nut on a speed bolt than a standard thread bolt. (c) Speed bolts require less than half the time to run a nut on than a standard thread bolt does.

Have the manufacturer punch the nail holes in the corrugated metal exactly where the nails should be located. These holes should be about one sixteenth of an inch larger than the nails to be used. With this change in manufacturing there would be a big saving in erection time.

The method of erection would be as follows:

(a) After the framework is completed the next step would be to put on the corrugated metal. In the past attachment of the interior board has always been the first step after the frame was completed. This was necessary to square up the framing and hold the ribs in place.

With the holes already punched in the corrugated metal and a little care taken on the first course to make sure it is parallel with the sill, the ribs can be moved to fit the nail holes. This would automatically square the framing and would require less skilled labor putting on the metal and driving the nails—also fewer bashed fingers.

"I have seen many hut roofs with holes around the nails where the nails had been driven in the wrong location and had been removed," says Mr. Allen. "Besides causing leaks, these excess holes mean lost time and labor. With the method I am suggesting, this would all be eliminated." This involves:

(b) "Applying the corrugated metal first would mean that the men could get under cover much sooner and the interior work would all be done under cover.

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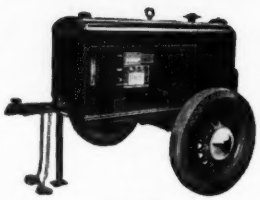

Model WN-200 welding range 30 to 260 amps. Air-cooled gasoline engine. Equipped with power take-off for operating AC electric tools, even while you're welding. Available with skid or portable mounting. Portable units can be towed at highway speeds.

Hard-surfacing grousers with P&H Hartop.

Southern Construction Projects

ALABAMA

ATMORE — Sherlock, Smith and Adams, Montgomery, Archts., have plans in progress for rebuilding Atmore State Prison, $800,000.

AUBURN — Alabama Polytechnic Institute received low bid from Chapman Construction Co., Dothan, for small animal clinic, $123,604.

BIRMINGHAM—Boothby Real Estate Co. has construction underway on 74 units, $200,000.

BIRMINGHAM—Jack B. Smith, Archt., has preliminary plans in progress for Chamber of Commerce Building.

BIRMINGHAM—Nelson Weaver has plans in progress for apartment building, $1,000,000.

BIRMINGHAM — Inglenook Apartments, Inc., let contract to Acme Homes, Inc., for 40-unit apartment buildings.

BIRMINGHAM—Elliott Carper, William P. Engel and Lee Mendel plan $1,000,000 apartment building.

BIRMINGHAM — Hamilton Perkins plans apartment building, $1,000,000.

BIRMINGHAM — Greer, Holmquist and Chambers, Archts., have plans in progress for 48-unit Ridgewood Apartments.

DOTHAN — LaFayette Street Methodist Church plans church, $50,000.

DOTHAN—School Board has plans for Trade School, $500,000 and $600,000.

EUFAULA—City plans hangar, paving of runways, Municipal Airport.

FLORENCE — City selected Barnard and Burk, Consit. Engrs., Triad Bldg., New Orleans, for natural gas system, $100,000.

GORGAS—Walker County Board of Education received low bid from J. F. Holley, 905 6th Ave., Birmingham, for school, $196,117.

HOMEWOOD — Trinity Methodist Church let contract to F. R. Hoar and Son, 509 19th St., Birmingham, Ala., for new church.

MOBILE—Mobile County Board of Education plans four schools.

MONTGOMERY—County Board of Revenue let contract to Bell & Williams, Montgomery, for plumbing alterations and repairs to jail.

MONTGOMERY — James M. Folmar and Henry I. Flinn, Jr., Archts., have plans in progress for apartment project, $330,000.

MONTGOMERY—City Board of Education received low bid from A. W. Talbert, Selma, for Negro high school, $49,970.

MONTGOMERY—James Davis, Archt., has plans in progress for alterations to Masonic Temple, $65,000.

MONTGOMERY — Gulf Area Construction Co., P. O. Box 12, has construction underway on "Fairview Villa," 100-unit apartments.

MONTGOMERY — State Highway Department let contracts for projects in following counties:

Choctaw—5.719 mi. base and single surface treatment on county road from Gilbertown east to Barry; Joe F. Walters, Troy, $29,736.

Greene—4.726 mi. base and single surface treatment from Boligee toward Forkland; Clyde O. Mitchell, 104 N. 44th, Birmingham, $41,067.

Pike—8.191 mi. base and single surface treatment on Henderson-Spring Hill-Brundidge Rd.; Vandigriff Construction Co., 4708 N. Court, Montgomery, $46,908.

Tallapoosa—017 mi. bridge on county road 2 mi. southeast of East Tallahassee; Montgomery Construction Co., Bell Bldg., Montgomery.

Coffee—16.244 mi. base and single surface treatment on Elba-Kinston Rd.; Vandigriff Construction Co., 4708 N. Court, Montgomery, $81,269.

Fayette—7.744 mi. base and single surface treatment on road from Alabama 18 to Bluff; W. L. Cobb Construction Co., Decatur, $43,883.

Russell — 3.246 mi. grading, drainage and single surface treatment on old Opelika Rd. in Phenix City; Hardaway Construction Co., Columbus, Ga., $38,185.

MUSCLE SHOALS—West Washington Park, Inc., let contract to F. R. Daugette, 3700 10th Ave., N., for 35 residences.

OPELIKA — City Board of Education received low bid from Conner Bros., Tuskegee, for West End Elementary School, $88,366.

PHENIX CITY—City let contract to J. D. Stillwell, Phenix City, for addition to courthouse at $50,000.

RUSSELLVILLE—Franklin Electric Cooperative received low bid, $194,720, from Trans-Electric Co., Pontoc, Miss., for 153.7 miles lines; Ala. 463 Franklin.

TROY—State Teachers College plans dining hall, $50,000.

TUSKEGEE — Veterans Administration, Washington, D. C., let contract to Chicago Bridge & Iron Co., 1700 Walnut St., Philadelphia, Pa., at $66,450, Item 2, steel water tank and towers, Bldg. 82, Veterans Hospital.

TUSKEGEE — Veterans Administration, Washington, D. C., let contract to Brooks Allison Co., 142 Edgewood Ave., N.E., Atlanta, Ga., at $83,400, for rehabilitation of electrical underground services, Veterans Administration Hospital.

TUSKEGEE — Veterans Administration, Washington, D. C., let contract to Whaley Co., 6424 1st Ave., N., Birmingham, at $60,544, Item 1, for improvements to water supply system, Veterans Hospital.

UNIVERSITY—University of Alabama let contract to Brice Building Co., 1021 2nd Ave., N., Birmingham, for science building, $350,000.

YORK—A. T. and N. Railroad, Clark Hungerford, Owner, will spend $1,500,000 for improvements to A. T. and N. Railroad.

ARKANSAS

ARKADELPHIA—City plans sewer extensions, $200,000.

ARKADELPHIA—Arkadelphia School District let contract to J. E. Pyle, Little Rock, for elementary school and Negro school, $155,140.

AUGUSTA—Corps of Engineers, Memphis, Tenn., let contract to T&H Construction Co., Dyer, Tenn., for 95,000 cu. yds. of earth and installation of 3 corrugated metal pipe drainage structures, White River Levee District, $36,375.

CAMDEN—Ouachita Rural Electric Cooperative Corp. let contract to M. S. Carroll Construction Co., P. O. Box 428, Ruston, La., for construction of 211.52 miles line, to serve 579 members; Ark. 27L Ouachita; $259,912.

CAMEL — Arkansas-Missouri Power Corp. plans 30-kilowatt steam electric generating plant; cost approximately $8,000,000.

FAYETTEVILLE — Board of Trustees of University of Arkansas let contract to Harmon Construction Co., Little Rock, for fine arts building; $656,000.

FAYETTEVILLE—University of Arkansas plans 4-H girls' dormitory, $60,000.

FORT SMITH—First Baptist Church plans educational building; $150,000.

HAMBURG—School Board plans elementary school, $140,000.

JONESBORO—State College plans buildings, $750,000.

LAKE CITY—Lake City School District let contract to Clark Construction Co., Black Rock, for school, $20,000.

LEWISVILLE — Corps of Engineers, New Orleans, La., received low bid from M. E. Pollard, Bossier City, for 495,000 yds. semi-compacted earthwork on Red River, $106,500.

LITTLE ROCK—School Board plans wing to proposed permanent building for Dunbar Negro High School.

LITTLE ROCK—Board of Directors, School District received low bid from M. O. Branton Construction Co. for South End Negro School at 27th and Main Sts., $131,382.

LITTLE ROCK — University of Arkansas School of Medicine plans Medical Center in State Hospital grounds; $6,200,000, not including dormitory.

MARIANNA—Arkansas Power & Light Co. let contract to L. E. Myers Co. for 15,840-volt three-phase electric line from Marianna's 110,000-volt substation to Aubrey and Moro.

MONTICELLO—First Presbyterian Church plans chapel and educational building; $216,000.

OGDEN—Corps of Engineers, Tulsa, Okla., let contract to Ray & Gauldin Equipment Co., Honey Grover, for repairs to levee, Orion Levee District.

PINE BLUFF—Pine Bluff A. M. & N. College plans building.

RUSSELLVILLE—Board of Trustees approved $180,000 bond issue for men's dormitory.

SEARCY—City let contract to Tri-States Construction Co., Hall Bldg., Little Rock, for sewage, water system extensions and improvements, $141,846.

TEXARKANA — Corps of Engineers, New Orleans, La., let contract to A. T. Utley Construction Co., Cape Girardeau, Mo., for 155,000 cu. yds. semi-compacted earthwork on Red River in Miller County Levee Districts, $40,135.

TEXARKANA—Corps of Engineers, Vicksburg, Miss., let contracts to Wester-Burnett Construction Co., P. O. Box 111, Denison, Tex., $617,505 on Items 1 and 2, and Valentine-Tucker & Terrell Contractors, 1524 Holden Ave., Newport, Ark., $176,890, on Item 3 for clearing Narrows Reservoir.

WARREN—First Baptist Church plans educational building and sanctuary, $250,000.

WARREN—Bradley County Memorial Hospital plans 50-bed hospital, $400,000.

WYNNE—School District No. 9 plans high school, $250,000.

DISTRICT OF COLUMBIA

House passed a bill authorizing the expenditure of $70,000,000 for purchase of sites and make plans for new post offices, and to renovate old Federal Buildings.

WASHINGTON—Public Buildings Administration let contract to Charles H. Tompkins Co., 997 16th, N.W., Washington, D. C., for Federal Courts Building, $9,381,686.

WASHINGTON — District Commissioners let contract to Ercoli Die Paolontonio, Washington, D. C., for service sewer, Arkansas Ave.

FLORIDA

CHATTAHOOCHEE—Corps of Engineers, Mobile, Ala., let contract to B. Perini, Framington, Mass.; Walsh Brothers, Davenport, Iowa; Ralph E. Mill, 410 Mill, Frankfort, Ky., and Blythe Brothers, 2911 Hutchinson Ave., Charlotte, N. C. (joint bid) $14,972, for Jim Woodruff Dam near Chattahoochee.

CORAL GABLES—University of Miami, let contract to Gust K. Newberg Construction Co., 7117 NW 5th Court, Miami, $800,000 for building.

CORAL GABLES — Babcock-Lamont Co., 3014 Coral Way, Miami, will build apartment hotel, $1,500,000, at Biltmore Way.

DADE COUNTY—Emelen Apartments, Inc., 407 Biscayne Blvd., Miami, will build apartment and laundry buildings, $115,000.

FORT LAUDERDALE — Bluewater Hotel Co., Birch Rd. and Sebastian St., let contract to Richardson Construction Co., 645 NW 7th Ave., for addition to hotel, $100,000.

GAINESVILLE — State Board of Control received low bid from C. A. Fielland, Inc., 107 N. Rome Ave., Tampa, $505,925 for girl's dormitory, for University of Florida.

GAINESVILLE — State Board of Control, Tallahassee, let contract to J. A. Jones Construction Co., 209 W. 4th St., Charlotte, N. C., $458,800 for engineering and industries building.

HAINES CITY—Board of Public Instruction, let contract to Gardenhire Brothers, Inc., Bartow, $314,172 for high school.

HIALEAH—Hialeah Race Course, Inc., received low bid from Caldwell Scott Construction Co., Inc., 340 S. E. 24th St., Fort Lauderdale at $172,449 for re-roofing and remodeling grandstand and clubhouse.

JACKSONVILLE—Young Women's Christian Association plans building, Duval St. and Shields Pl., $500,000.

MIAMI BEACH — City received low bid from L. & H. Miller Co., 1421 18th St., Miami Beach, at $724,950 for auditorium, N. W. corner Washington Ave. & 17th St.

MIAMI BEACH—Hyde Park Hotel, 4041 Collins Ave., let contract to Hill York Corp., 1121 SW 8th St., Miami, for installation of air conditioning system in existing hotel building, $100,000.

MIAMI—Keldik Corp., 323 Shoreland Bldg., let contract to S. S. Jacobs Construction Co., Hildebrandt Bldg., Jacksonville, for store, to be leased to Kitty Kelly shoes, and Diana Stores Corp., $174,000.

MIAMI — G. Goldberg, South Seas Hotel, 1751 Collins Ave., Miami Beach, let contract to Chalker Construction Co., 343 SW North River Dr., Miami, for warehouse, $100,000.

MIAMI BEACH — Shore Club Hotel, 1901 Collins Ave., received low bid, $586,702 from W. J. Nixon, 1844 NW 11th St., Miami, for hotel, 1901 Collins Ave.

MIAMI—Central Manor, Inc., 801 Olympia Bldg., will build 12 apartment buildings, NW 68th St., $200,000.

MIAMI — Department of Army, National Guard Bureau, St. Augustine, let contract to Frank L. Rooney, 5880 N. E. 4th Ave., Miami at $101,763 for two motor vehicle storage buildings and one service center building.

MIAMI—Board of Public Instruction, Dade County, let contract to Bradford Builders, Inc., 1101 Lincoln Road Bldg., Miami Beach, $310,936 for Edison Elementary School.

MIAMI—South Central Manor, Inc., let contract to Dade Construction Co., 6900 NW 10th Ave., Miami, for $360,027.

MIAMI—John Woodrum, 1100 Tangier St., Coral Gables, plans store and warehouse building, 7321 NE 2nd Ave., $540,000.

MIAMI—West Kingsway, Inc., 725 NW 67th St., will build 34 duplexes at Thomas Ave., $340,000.

MIAMI—East Kingsway, Inc., 725 NW 67th St., will build 17 duplexes Douglas Rd., $170,000.

MIAMI—Canoga Inc., will build seawalls, South end of Biscayne Key, Dade County, $150,000.

MIAMI—Dade County Port Authority, plans restaurant and customs addition, $100,000.

NORTH MIAMI BEACH—City let contract to Edelblut Construction Co., Clearwater & Fort Myers, Fla., for water distribution system.

OPA LOCKA—Dr. Zvart Manoyan, Fisherman St., let contract to DeMeo Construction

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Southern Construction Projects

(Continued from page 15)

Co., 13377 W. Dixie Highway, North Miami, for one-story clinic and apartment building.

SARASOTA—Church of the Redeemer let contract to Mills and Jones Construction Co., Tampa, at $146,000, for new church.

SURFSIDE—Colonial Realty Co., Inc., let contract to L. & H. Miller Co., 1421 18th St., Miami Beach, for two apartment buildings, 32 units, at 3595 Collins Ave., $150,000.

TALLAHASEE — First Baptist Church let contract to Albritton-Williams, Inc. at $240,350, for educational building.

TAMPA — E. E. Britton has construction underway on $1,000,000 drive-in theatre, South Dale Mabry Ave. near Euclid.

TAMPA—City plans $13,000,000 sewer revenue bonds.

WINTER HAVEN—City received low bids for following water projects; water distribution system, C. T. Dawkins, 420 S. Rome Ave.; Tampa, $120,366; sewerage disposal system, Part I, sewer lines, J. B. Owens, Clearwater, $222,180; sewerage disposal system, Part II, structures, Coleman and Frye, P. O. Box 6406, Clewiston, $176,942.

GEORGIA

ADEL — Adel School Board approved $280,000 bond issue for new school.

ALBANY — Board of Education plans two grade schools.

ATHENS—William J. J. Chase & Associates, 140 Peachtree St., Atlanta, Archts., for high school, $1,000,000.

ATLANTA—Board of Education plans addition to Henry Grady High School.

ATLANTA—Fulton County Board of Education plans additions and alterations to Margaret Fain School.

MILLEDGEVILLE — State Dept. of Public Welfare received low bid of $107,200 from G. A. Forrester, Jr., 3284 Forsyth Rd., Macon, for additions and alterations to buildings, State Hospital, Milledgeville.

ATLANTA — Murphy Apartments, Inc., plans 66 apartment units; $360,000.

ATLANTA — Corps of Engineers let contract to Carroll Construction Co., 116 Courtland St., N.E., Atlanta, for alterations and additions to building, $82,000.

ATLANTA — City let contract to Concrete Builders, Inc., 774 Spring St., N.W., for Hunter Street Branch Library, $97,165.

ATLANTA—State Highway Department received low bids for projects in following counties:

Charlton — 6.382 mi. paving on relocation; Wright Construction Co., Columbus, $142,757.

Putnam—5.529 mi. grading, base and surface treatment, also 1 bridge; Jefferson Contracting Co. & George C. Blount & Son, Inc., Wadley and Atlanta, Ga., $116,964.

Lumpkin — 7.706 mi. grading and paving, also widening 1 bridge; Hardaway Contracting Co., Columbus, $455,789.

Cobb—5.134 mi. grading and paving, also 1 bridge; W. L. Foorence Construction Co. & G. L. Strickler, Powder Springs and Austell, Ga., $901,550.

Fayette and Coweta — 3.158 mi. grading, base and surface treatment; Carlton Contracting Co., Inc., Albany, $143,593.

ATLANTA—State Highway Department received low bids for projects in following counties.

Bartow — Bridge at Etowah River; H. G. Smith, Fitzgerald, $129,000.

Fayette and Coweta—Bridges at Whitewater Creek; Scott Construction Co., Thomasville, $108,785.

ATLANTA—State Highway Department received low bids for projects in following counties:

Barrow and Oconee—5.066 mi. grading, base and surface treatment; W. L. Cobb Construction Co., Decatur, $91,711.

ATLANTA—Georgia Power Co., plans store and service unit, $230,000.

ATLANTA—Pooles Creek Apartments, Inc., let contract to Algernon Blair, Henry Grady Bldg., for 200 apartment units, $1,250,000.

ATLANTA—Asa G. Candler, Inc., received low bid of $205,717 from Barge-Thompson Co., 136 Ellis St., N.E., for garage.

CARTERSVILLE—Corps of Engineers, Mobile, Ala., let contract to Carlton Contracting Co., Inc., Albany, Ga., for Clark Creek Bridge in Bartow County, $84,660.

COLUMBUS — Camellia Apartments, Inc., let contract to Williams Construction Co., Columbus, at approximately $2,700,000, for 400 apartment units.

COLUMBUS—City let contract to Murphey Pound Construction Co., Hill Bldg., Columbus, for Bradley Memorial Library.

COLUMBUS—Board of Education let contract to Murphey Pound Construction Co., Columbus, for library, $198,250.

COVINGTON — Newton County Board of Education let contract to Siano Construction Co., 737 W. Peachtree St., Atlanta, for high school, $203,850.

EAST POINT — Cheryl Drive Apartments, Inc., let contract to Fred L. King, 104 Jefferson Ave., for 60 apartment units, $378,000.

FORT BENNING — Williams Construction Co., Columbus, Ga., has contract at $734,150 for family-type quarters.

FULTON COUNTY—Board of Commissioners of Roads & Revenue, Atlanta, let contract to Capital Construction Co., 167 Harris St., N.W., Atlanta, at $233,200, for Health Centers at Howell Mill Road, Fairburn, Collins, Buckhead, Red Oak, Rockdale & Perkerson.

JASPER — Amicalola Electric Membership Corp. has REA loan, $490,000, for 245 miles line to serve 701 rural consumers.

MACON—Stillwell Construction Co., Bankers Insurance Bldg., has contract at $256,000 for Vineville Methodist Church.

MACON—Dennis and Dennis, Bankers Insurance Bldg., Archts., have plans in progress for $200,000 YMCA building.

MARIETTA — U. S. Engineer Office, Savannah, plans warehouse at Marietta Air Force Base.

MARIETTA — First Baptist Church received low bid, $159,436, from Griffin Construction Co., 26 3rd St., N.W., Atlanta, for Sunday School Annex.

Corps of Engineers, Savannah, Ga., received low bids from following for clearing of reservoir, Group 1, Clark Hill Project, Savannah River Basin, Savannah River, Inv. 173; Robert Lee, Inc., Manning, S. C., $170,000-clearing Parcel SS-1; Robert Lee, Inc., $165,000-clearing Parcel SS-2; E. H. Hines Construction Co., P. O. Box 924, Greenwood, S. C., $385,250-clearing Parcel GS-1; Robert Lee, Inc., Manning, S. C., $280,000-clearing Parcel GS-2; Volunteer Construction Co., 125 W. Cherokee Ave., Cartersville, Ga., $118,750-clearing Parcel LG-1.

KENTUCKY

Corps of Engineers, Nashville, Tenn., plan clearing segments in Group 4, Wolf Creek Reservoir, Cumberland River, Inv. 83.

FRANKFORT — Department of Highways let contract for projects in following counties:

Graves—4.047 mi. grade, drain and high-type surface; S. J. Boone, Owensboro, $111,735.

Morgan — 5.5 mi. grade, drain and traffic-bound surface; Kentucky Road Oiling Co., Frankfort, $127,536.

Estill-Powell — Clay City-Irvine Rd., culvert and approaches at Plum Creek and bridge and approaches at Red River, 0.852 mi.; Terry & Steadman, Inc., Bay City, Mich., $144,217.

Adair—Bridge and approaches over Russell Creek at Columbia, 0.361 mi.; George H. Cheek Construction Co., McClure Bldg., Frankfort, $110,491.

Crittenden — 8.5 mi. grade, drain and traffic-bound surface; Mulligan Bros., Inc., Greenville, $230,340.

Henry—0.838 mi. grade, drain and high-type surface; Kelly Contracting Co., Fincastle Bldg., Louisville, $127,202.

Logan—9.047 mi. bituminous surface; Geoghegan & Mathis, Bardstown, $101,955.

Barren-Metcalf—21.221 mi. bituminous surfacing; L. P. Cavett Co., Lockland, Ohio, $108,839.

Anderson-Washington — 19.969 mi. bituminous surfacing; Breslin Construction Co., Louisville, $169,238.

Graves — New Hope Church-Golo-Farmington Rd., 8.1 mi. reconstruction and traffic-bound surface; Corbett, Davidson & Son, Mayfield, $72,914.

Fulton—Resurfacing Fulton-Hickman Rd., 8.3 mi.; Porter-Dewitt Construction Co., Poplar Bluff, Mo., $62,270.

LEXINGTON—City Officials and Chamber of Commerce propose a parking lot for city a block away from Main Street business area, bounded by Limestone, Vine, Upper and High Streets.

LOUISVILLE — The Great Atlantic and Pacific Tea Co., 901 South 15th St., P. O. Box 300, let contract to Whittenberg Construction Co., 2214 S. Floyd, for $1,700,000 warehouse, office and plant, at conjunction of Kentucky and Indiana Terminal Railroad and Wilson Ave., or Cane Run Rd.

LOUISVILLE — St. Matthews Sewer District plans sewage-pumping station at Beauchamp Road and Beargrass Creek.

PAINTESVILLE — Big Sandy Rural Electric Cooperative Corp. has REA loan, $380,000, for 83 miles line, to serve 670 rural consumers.

LOUISIANA

St. Landry Parish School Board received low bids for following school projects; school at Morrow, La., to J. A. Eiland, Jr., Bunkie, $123,607; school building at Washington, Romero and Theall, Youngsville, La., $121,000; school at Port Barre, La., J. A. Eiland, Jr., Bunkie, $98,797; school at Lawtell, E. E. Rabalais & Sons, Bunkie, $103,726; school building at Leonville, La., $95,000 to Romero and Theall, Youngsville, and food processing center at Lawtell, Norman & Co., Lake Charles, $25,485.

Tammany Parish School Board received low bids for following school projects: Dye and Mullins, Columbia, Miss., on the additions to the Slidell Colored School at $92,437; Dye and Mullins, Columbia, Miss., on school building at Covington, La. at $95,985; Deutsch and Edgar, Covington, La., on alterations and additions to Covington grammar school at $91,000; Haase Construction Co., 822 Perdido St., New Orleans, La., alterations and additions to the Slidell High School and gymnasium, $54,347.

LOUISIANA — Natchitoches Parish School Board let contracts for following projects: auditorium building at Belwood, La., to A. B. Chaudoir & Sons, Alexandria at $17,439 and also gymnasuim building at Provencal, La., at $55,023.

Tangipahoa Parish School Board let contracts for following schools: Amite Building & Supply Co., inc., P. O. Box 348, Amite, $78,700 for new gymnasium at Spring Creek, La. and gymnasium at Chesbrough.

ABBEVILLE — Vermilion Parish Police Jury, let contract to M & I. Building Materials, Kaplan, $89,036 for library.

ABBEVILLE — Vermilion Parish School Board let contract to Weill Lumber Co., Abbeville, for training school and gymnasium, $47,537.

ALEXANDRIA — Louisiana Cooperative, Inc., P. E. Randol, Pres., let contract to Lincade and Lofton, Brookhaven, Miss., at $328,869, for 247 miles electric distribution lines, Grant, Natchitoches, Rapides, Evangeline, Avoyelles and St. Landry Parishes.

ALEXANDRIA — Rapides Parish Waterworks District No. 3, seeks permission to call $2,000,000 revenue bond issue election for waterworks in Wards 9 and 10.

BATON ROUGE—East Baton Rouge Parish School, received low bid from Charles Carter, Box 1270, Baton Rouge, $280,500 for Scotlandville Elementary School.

BATON ROUGE — Department of Highways, let contract for project in following parish:

Calcasieu—7 mi. of Sulphur-Westlake hwy., T. L. James & Co., Inc., Ruston, $402,166.

BATON ROUGE—Department of Highways, received low bid for projects in following counties:

Sabine—4.256 mi. grad., drain. struc., sand clay gravel or soil cement and 3-applicatlon bit. surf. treat.; T. L. James & Co., Inc., Ruston, $205,375.

Terrebonne—6.130 mi. grad., small drain. struc. and Portland cement concrete pavement; T. L. James & Co., Inc., Ruston, $451,415.

Union—5.438 mi. grad., drain struc. soil cement base course; Henry & Hall, Dubach, $164,870.

Terrebonne—4.314 mi. grad., drain. struc. and Portland cement concrete pavement; Forcum-James Co., Box 911, Baton Rouge, $277,365.

Terrebonne — Company Canal Bridge at Bourge, St. Rt. No. 69; 0.023 mi. of vertical lift span bridge; W. R. Fairchild, Box 127, Hattiesburg, Miss., $169,921.

Plaquemines—6.345 mi. grading, drainage structures; W. R. Aldrich & Co., Kalurah University Gardens, Baton Rouge, $419,042.

BATON ROUGE — State Department of Highways, received low bid for project in following parishes:

Richland—3.477 mi. of grading, drainage structures, gravel base course and bituminous surface treatment; Central Construction Co., Inc., Box 1011, Monroe, $158,148.

BATON ROUGE—East Baton Rouge Parish School Board received low bid from Greely Plumbing Co., 2141 Main St., Baton Rouge for two-pipe hot water forced circulating heating system at Highland School.

BELCHER—Caddo Parish School Board let contract to Stegers Builders Supply Co., Atlanta, Texas, $44,565 for gymnasium.

BOGALUSA — Bogalusa School Board received low bid from Southland Construction Co., Bogalusa, $384,800 for Northside Elementary School, Superior Avenue School and Terrace School.

BOSSIER—Bossier Rural Electric Membership Corp. has REA loan, $280,000 for 120 miles line.

CROWLEY—Louisiana State University, received low bid from Oil Field Contracting Co., Lafayette, for 11,600 feet gas line at Rice Experiment Station.

DENHAM SPRINGS—P. T. Jones, Mayor.

will receive bids for improvement of natural gas distribution system; $150,000.

DENHAM SPRINGS—P. T. Jones, Mayor, plans installation of modern sewerage system, $240,000.

DeRIDDER—W. C. Salley, Ouachita Bank Bldg., Monroe, has contract at $384,444 for Beauregard Memorial Baptist Hospital.

FRANKLINTON — Washington Parish School Board let contract to Dye and Mullings, Columbia, Miss., $37,940 for Washington Parish Training school and gymnasium.

GRETNA—Mayor and Board of Aldermen let contract to Campbell's Welding Works, Natchez, $64,827 for 40,000 lin. ft. of 6", 8300 lin. ft. of 8", 4000 lin. ft. of 10" and 5000 lin. ft. of 12" cast iron water pipe and hydrants, valves and fittings.

HAMMOND—Board of Education let contract to Union Construction Co., Inc., 2634 Almonaster Ave., New Orleans, for sewer pump station.

HARVEY—Second Jefferson Drainage District, Marrero, let contract to Keller Construction Co., 7800 Palm St., New Orleans, $111,247, for extension to pumping plant on Harvey Canal.

INDEPENDENCE — Mater Dolorosa Congregation let contract to Cucchiara Brothers, Hammond, $71,200 for parochial school.

JENNINGS—Board of Education plans new Jefferson Parish Trade School, $250,000.

LAFAYETTE—City plans election June 28 on $260,000 bond issue for recreation and $159,000 bond issue for fire department.

LAFAYETTE—City will hold special election June 28 on $2,800,000 bond issue for electrical system.

LAFAYETTE—Ashton Mouton, Mayor, will hold special bond election June 28 on $1,990,000 bond issue for sewerage system.

LAFAYETTE—Ashton Mouton, Mayor, will hold special bond election June 28 on $2,300,000 for water system.

LAFAYETTE—State Bond and Tax Board plans election June 28 for $493,000 drainage bond issue.

LAFAYETTE—State Bond and Tax Board plans election June 28 for $100,000 bond issue for street improvements.

LAKE CHARLES—First Sewerage District let contract to Consolidated Western Constructors, Inc., 1075 M & M Bldg., Houston, Texas, $52,000 for 2000 house sewer lines in the Goosport section.

LAKE CHARLES—Lake Charles Harbor & Terminal District, let contracts to A. M. Mutersbaugh, P. O. Box 1540, Lake Charles, $53,000, for wharf and transit shed project and Emmett Young, Inc., P. O. Box 765, Lake Charles, for bulkhead project.

MARKSVILLE — Avoyelles Parish School Board plans home economics building at high school.

NEW IBERIA—City plans $75,000 bond issue for sewerage extension.

NEW IBERIA—City, received let contract to T. L. James & Co., Inc., Ruston, for 18,678 sq. yds. concrete pavement.

NEW ORLEANS — Public Buildings Administration let contract to Bartley & Binnings, 433 Gravier St., New Orleans at $37,-988 for air conditioning system for surgery.

POINTE A LA HACHE—Corps of Engineers, New Orleans, received low bid from Hough-Cowgur & Co., Inc., 320 N. 4th St., St. Louis, Mo., $559,307, for jetties at mouth of waterway at Empire, Plaquemines Parish.

A. B. Harper, Fort Smith, Ark., awarded contract at $5,257,000, for 100-mile natural gas pipeline, starting near Lake Charles, and extending to communities of Woodlawn, North Tepetate, Lakeside and Chalkley.

LAKE CHARLES—Calcasieu Parish School Board approved $1,460,000 bond issue for school improvements.

LOGANSPORT — School Board approved $240,000 bond issue for enlargement of schools.

MANDEVILLE—State Southeast Louisiana State Hospital Board plans hospital, $2,500,000.

MONROE—First Presbyterian Church let contract to Jesse F. Heard and Sons, at $127,-000 for educational building.

MORGAN CITY—City sold $210,000 bond issue to Well and Co., Newman, Brown & Co., & Musloch, Badeau & Smith all of New Orleans, for waterworks improvement.

NEW ORLEANS — Baptist Hospital plan 150-bed wing, $1,000,000.

NEW ORLEANS — Richard Koch, Queen and Crescent Bldg., Archt., has plans and specifications nearing completion for church and recreation hall, S. Claiborne and Jefferson Aves., for Church of Jesus Christ of Latter Day Saints; $150,000.

NEW ORLEANS—Board of Commissioners, Port of New Orleans, let contracts for following projects:

Concrete deck and firewall at Esplanade Wharf; John Riess, Carondelet Bldg., $159,-710;

Pile driving and concrete at Pauline Street Wharf; R. P. Farnsworth & Co., Inc., 1515 S. Salcedo St., $86,708.

NEW ORLEANS—Mater Dolorosa School, Rev. Monsignor Joseph Pyzlkiewicz, Pastor, let contract to Lionel F. Favret, 937 Gravier St., New Orleans, $181,449 for convent addition and additional story to school.

NEW ORLEANS — Sewerage and Water Board of New Orleans received low bid from Bernard and Byrd, Inc., New Orleans, $805,-137 for Contract No. 236 D, for approximately 1625 lin. ft. of 16 ft., 250 lin. ft. of 12½ foot, 1235 lin. ft. of 10-foot, 1880 lin. ft. of S-foot reinforced concrete lined and covered canal in Florida Ave. from Pump Station No. 3 at London Avenue to Fair Grounds.

NEW ORLEANS—Harry Realty and Investment Corp. let contract to E. B. Ludwig Construction Co., 1350 Jefferson Hwy., for building, Poydras and S. Dorgenois Sts., $134,848.

PLAQUEMINE — Iberville Parish School Board will hold special bond election July 12 on $1,725,000 bond issue for school improvements.

SCOTLANDVILLE—Board of Education let contract to Perrilliat-Rickey Construction Co., 1530 S. Rendon St., New Orleans, $219,-400 for alterations and additions to school for negro blind and alterations and additions to school for negro deaf.

SHREVEPORT—City Council Class 5 Municipal Airport near the southwestern edge of City, $4,000,000 negotiations underway for a 1900-acre Hollywood site.

SHREVEPORT — First Baptist Church let contract to J. A. Jones Construction Co., 3600 Southern Ave., at $666,995, for educational building.

SHREVEPORT—E. A. Stiller plans $1,500,-000 office building.

TRANSYLVANIA—School Board let contract to Frank Maslin & Sons, Monroe, $177,-000 for 13-classrooms.

VIDALIA—Corps of Engineers, New Orleans, received low bid from T. L. James & Co., Inc., Ruston, $1,347,652, for construction of Bayou Cocodrie Drainage structure, 3 mi. west of Shaw on east bank of Bayou Cocodrie in Concordia Parish.

VILLE PLATTE — Evangeline Parish School Board sold $150,000 bond issue to Barrow Leary & Co. of Shreveport and W. R. Stevens Investment Co., Little Rock, Ark., for school improvements.

WINNSBORO — Franklin Parish School Board will soon call for bids for $325,000 bond issue for school improvements.

MARYLAND

Secretary of Defense asked Congress to approve projects totaling $18,000,000.

Woodward & Lothrop has plans in progress by Starrett and Van Vleck, New York, N. Y., Archts., and Raymond Loewy, Assocs. Archts., for proposed $3,000,000 store on northwest corner Wisconsin and Western Aves.

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 961—sheet asphalt resurfacing; Potts & Callahan Paving Co., Inc., 2801 Falls Rd., $126,040.

Contract No. 963—sheet asphalt resurfacing; Arundel Construction Co., Inc., 4420 E. Eager St., $113,608.

BALTIMORE—State Roads Commission let contracts for projects in following counties:

Dorchester — Contract No. D-219-115; furnishing, delivering and applying bituminous resurfacing and widening along State Rt. No. 16, 6.00 mi.; T. B. Gatch & Son, Inc., 5928 Belair Rd., (slag), $202,198.

Caroline—Contract No. Co-195-1-215; grading, drainage and surfacing of relocation of State Rt. No. 313, 1.068 mi. reinforced concrete surfacing; George & Lynch, Wilmington, Del., $177,701.

Anne Arundel — Contract No. AA-410-315; furnishing, delivering and applying bituminous concrete resurfacing and widening along following highways: resurfacing along State Rt. No. 177, 0.040 mi.; resurfacing along State Rt. No. 169, 0.910 mi.; 1.59 mi. widening and 1.75 mi. resurfacing along State Rt. No. 648, in Glen Burnie, for 1.75 mi. and resurfacing along U.S. Rt. No. 176, in Glen Burnie, for 1.170 mi.; Bituminous Construction Co., 3301 Ridgewood Ave., $123,267.

BALTIMORE — Johns Hopkins University plans Shriver Hall to be constructed at Charles St. entrance, $1,200,000.

BALTIMORE—City, Robert E. L. Williams, announced selection of Hal A. Miller, 337 St. Paul St., as architect for preliminary plans for new elevators and air-conditioning courthouse, $1,000,000.

BALTIMORE—Board of Estimates let contract to Ligon and Ligon, Inc., 6310 Ridgewood Ave., at $106,217, for constructing conduit line and manholes.

BALTIMORE—Church of the Redeemer has campaign underway to raise funds for $150,000 parish house building.

BALTIMORE—Board of Estimates let contract to Philip Vizalni, 504 Stamford Rd., for Benjamin Franklin School No. 239, $1,088,000.

BALTIMORE—Board of Estimates has allocated more than $10,000,000 for school construction and school playgrounds.

BALTIMORE — Lochearn Presbyterian Church, Patterson at Wildwood Aves., plans $125,000 church and Sunday school.

BALTIMORE — Windsor Forest, Inc., 1310 Fidelity Bldg., let contract to Aries Construction Co., 1310 Fidelity Bldg., for 25 residences, 24 Forestglen Rd., Windsor Hills, $150,000.

BALTIMORE—City Council has bill for development of Light Street waterfront to provide a bulkhead area of new land as a site for park, warehouses and parking areas; $1,-500,000 bond issue.

BALTIMORE—Johns Hopkins Hospital let contract to Consolidated Engineering Co., Inc., 20 E. Franklin St., at $246,600, for basement and sub-basement for X-Ray building, 601 N. Broadway.

BALTIMORE—Board of Estimates let contract to Leimbach & Williams, Inc., 30 W. Biddle St., at $404,430, for Southern Health District Building, Wall St., near West St.

BALTIMORE—State Roads Commission is laying plans for new highway bridge across Patuxent River, in Prince Frederick, $2,-420,000.

BALTIMORE—Kinwat Corp., 1110 Fidelity Bldg., has plans complete for 16 residences, Beauregard Ave., Belwood; $128,000.

BALTIMORE—U. S. Engineer Office let contract to Charles B. Tovell & Co., 2503 St. Paul St., for alterations for bachelor officers' quarters, Camp Holabird.

BALTIMORE — Post Quartermaster, Purchasing and Contracting Branch, received low bid from John R. Crocker Co., 2112 Maryland Ave., at $36,000, for partitions, repairing existing walls and floors, installation of heating, plumbing and electrical work, Bldg. No. 1, Camp Holabird; Ser. 18-102-49-116.

BALTIMORE — Post Quartermaster, Purchasing and Contracting Branch, received low bid from John Matricciani Co., 229 S. Exeter St., for storm drainage, Bldg. No. 104, Railroad Repair Shop, Camp Holabird; Ser. 18-102-49-114.

BALTIMORE — Post Quartermaster, Purchasing and Contracting Branch, let contract to Hurwitz Electrical Co., 1011 Hillen St., for complete classrooms, Bldg. No. 30, Camp Holabird; Ser. 18-102-49-102.

BALTIMORE — Post Quartermaster, Purchasing and Contracting Branch, received low bid from Construction Service, Inc., 1322 N. Monroe St., for storm drainage system, Bldgs. Nos. 12 and 22, Camp Holabird; Ser. 18-102-49-119.

BALTIMORE — Post Quartermaster, Purchasing & Contracting Branch, Baltimore, received low bid from The Matricciani Construction Co., 229 S. Exeter St., for sanitary sewer connections to City Sanitary sewer system, Serial No. 18-102-49-98.

BALTIMORE — Post Quartermaster, Purchasing & Contracting Branch, Baltimore, received low bid of $25,984 from Wallace & Gale Co., 115 S. Gay St., for repairs and replacements to roof, Bldg. No. 1, serial No. 18-102-49-101.

BALTIMORE—Corps of Engineers approved proposed waterway improvements to Twitch Cove, Big Thoroughfare River and Levering Creek.

BALTIMORE — Consolidated Gas, Electric Light & Power Co., Lexington Bldg., has plans completed for interior alterations to building, 700-24 W. Pratt St.; $28,000; private plans; owner builds.

BALTIMORE—Board of Estimates let contract to Smith, De Corse & Christhilf, 517 N. Charles St., for Chesapeake Yard, $32,322.

BALTIMORE—Corps of Engineers, Philadelphia, Pa., let contract to George & Lynch, Delaware Trust Bldg., Wilmington, Del., for approach roads to Chesapeake City bridge over Chesapeake and Delaware Canal.

BALTIMORE — State Roads Commission will receive bids July 5, 12, 14, 19, 21 and 26 and August 2 and 9 for sub-structure of Chesapeake Bay Bridge.

BALTIMORE — City Council passed ordinance authorizing Epps Parking Co., 106 W. Fayette St., to erect a parking garage at Park Ave. & Mulberry St.

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 959—cement concrete; Trinity Building & Construction Co., 4420 Eager St., $77,852.

Contract No. 960—cement concrete; Trinity Building & Construction Co., 4420 Eager St., $55,074.

BALTIMORE—Board of Estimates let contracts for following project:

Contract No. 967—cement concrete; John P. Reddington, 2 E. Lexington St., $49,840.

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 182—cement concrete alley paving; Paramount Construction Co., Inc., 3700 Gough St., $89,262.

Contract No. 968—cement concrete; Paramount Construction Co., Inc., 3700 Gough St., $88,615.

Contract 972—cement concrete; Carozza-Hamill & Co., 10 W. 25th St., $70,958.

Contract No. 973—cement concrete, Trinity Building & Construction Co., 4420 E. Eager St., $87,336.

(Continued on page 18)

Southern Construction Projects

MARYLAND

(Continued from page 17)

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 965—cement concrete; Carozza Hamill & Co., 10 W. 25th St., $78,188.

Contract No. 966—cement concrete; Carozza Hamill & Co., 10 W. 25th St., $82,343.

Contract No. 207—cement concrete footways; Pomer Construction Co., 2326 Reisterstown Rd., $18,256.

BALTIMORE—Board of Estimates received low bids for following projects:

Contract No. 974—cement concrete; Property Sales Co., 900 Court Square Bldg., $43,978.

Contract No. 979—cement concrete; John P. Reddington & Sons, 2 E. Lexington St., $70,699.

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 969—sheet asphalt resurfacing; Arundel Construction Co., Inc., 4420 E. Eager St., $129,352.

Contract No. 970—sheet asphalt resurfacing; Baltimore Asphalt Block & Tile Co., 1320 N. Monroe St., $126,293.

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 976—sheet asphalt resurfacing; Mahoney Bros., 24 Knickerbocker Bldg., $159,421.

Contract No. 980—sheet asphalt resurfacing; The National Paving & Contracting Co., 4200 Menlo Dr., $128,176.

BALTIMORE—Board of Estimates received low bids for following projects:

Contract No. 984—bituminous concrete surfacing; The American Paving & Contracting Co., 2525 Loch Raven Rd., $161,764.

Contract No. 982—sheet asphalt resurfacing; Baltimore Asphalt Block & Tile Co., 1320 N. Monroe St., $142,407.

Contract No. 983—sheet asphalt resurfacing; P. Flanigan & Sons, Inc., 2405 Loch Raven Rd., $140,986.

Contract No. 981—sheet asphalt resurfacing; Arundel Construction Co., Inc., 4420 E. Eager St., $123,827.

Contract No. 975—cement concrete; Trinity Building & Construction Co., 4420 E. Eager St., $100,304.

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 956—cement concrete; Paramount Construction Co., Inc., 3700 Gough St., $62,768.

Contract No. 958—cement concrete; Paramount Construction Co., Inc., 3700 Gough St., $55,437.

Contract No. 206—cement concrete footways; Louis J. Barbieri, 140 N. Lakewood Ave., $18,005.

BALTIMORE—Board of Estimates let contract for following project:

Contract No. 962—sheet asphalt resurfacing; The National Paving & Contracting Co., 4200 Menlo Dr., $128,114.

BALTIMORE—Board of Estimates let contract for following project:

Contract No. 964—pave highways; Mahoney Brothers, 24 Knickerbocker Bldg., $99,780.

BALTIMORE—Board of Estimates let contracts for following projects:

Contract No. 977—sheet asphalt resurfacing; Potts & Callahan Paving Co., Inc., 2801 Falls Rd., $152,537.

Contract No. 978—sheet asphalt resurfacing; The American Paving & Contracting Co., 2525 Loch Raven Rd., $125,064.

BALTIMORE—State Roads Commission let contracts for projects in following counties:

Dorchester—Contract No. D-218-115; furnishing, delivering and applying bituminous resurfacing and widening along following highways; resurfacing along State Rt. No. 16, beginning at R R. Crossing in Cambridge, for 0.90 mi. and widening and resurfacing along State Rt. No. 335, beginning at Black-water Bridge for 2.10 mi.; Eastern Highways Co., Belle Grove Rd., P. O. Box 2738, Brooklyn (slag), $48,869.

Montgomery—Contract No. M-453-315; resurfacing along State Rt. No. 410, East-West Hwy., beginning at Georgia Ave., for 0.850 mi.; widening and resurfacing along State Rt. No. 384, Colesville Rd., beginning at Georgia Ave., for 0.500 mi., and widening and resurfacing along State Rt. No. 653, 16th St., beginning at D. C. Line, for 0.170 mi.; McGuire & Rolfe, Inc., 1st & O SE., Washington, D. C., $63,399.

Anne Arundel—Contract No. AA-411-315, furnishing, delivering and applying bituminous resurfacing along U. S. Rt. No. 301, 8.044 mi.; Eastern Highways Corp., P. O. Box 2738, Brooklyn, $156,300.

Caroline—Contract No. Co-195-2-215; steel beam and concrete bridge over Chiptank River on relocation of State Rt. No. 313 at Greensboro; George & Lynch, Wilmington, Del., $121,035.

Frederick—Contract No. F-4490-5-615; modification of vertical curves and resurfacing and widening of section of State Rt. No. 32, beginning at Emmitsburg, 1.144 mi.; M. J. Grove Lime Co., Lime Kiln, $63,360.

Prince Georges—Contract No. P-649-515, furnishing, delivering and applying bituminous resurfacing and widening along U. S. Rt. No. 301 beginning at South end of Marlboro By-Pass, 6.430 mi.; Highway Construction Co., P. O. Box 4437, Washington, D. C., $96,235.

BALTIMORE—State Roads Commission received low bids for projects in following counties:

St. Marys—SM-286-1; F. P. Asher, Jr., & Sons, Inc., Annapolis, $309,306, $298,046 and $298,046.

Cecil—Contract No. CE-280-2-215; United Paving Co., Elkton, $324,740.

Howard—Contract No. HO-234-1; T. E. Ritter Corp., 426 W. York, Norfolk, Va., $1,689,397.

BALTIMORE—State Roads Commission, 108 E. Lexington St., received low bids for projects in following counties:

Allegany—Contract No. A-388-1-650; FAP No. S-16(2), furnishing, delivering and applying bituminous concrete resurfacing and widening along Frostburg-Midlothian R.R., 1.611 mi.; Cumberland Contracting Co., Cumberland, $45,994.

Queen Anne—Contract No. Q-108-3-250; FAP No. S-156(1), stabilizing of existing gravel surfaced section of Queen Anne-Starr-Centreville Rd., 2.324 mi.; E. Stewart Mitchell, Inc., 3301 Ridgewood Ave., $25,151, $24,329 and $25,583.

Baltimore—Contract No. B-582-415; furnishing, delivering and applying bituminous concrete surfacing and resurfacing upon existing and new macadam roadway and installation of combination curb and gutter, along Frederick Rd., 0.986 mi.; Harry T. Campbell Sons Corp., Towson, $241,941.

BALTIMORE COUNTY—County Commissioners, Towson, let contract for project in following county:

Baltimore—Contract 4915 B—improvement of certain streets in Drumcastle Apartment Development, 9th District; Harry T. Campbell & Sons Corp., Towson.

BALTIMORE COUNTY—County Commissioners of Baltimore County, Court House, Towson, received low bid from Maroeco Construction Co., 231 S. Exeter St., Baltimore, for storm drains, sanitary sewers and water mains, Dunmore and Vicinity, $46,590; Contract No. 161, D, S & W.

BALTIMORE COUNTY—County Commissioners, Towson, received low bid for project in following county:

Baltimore—Contract No. 491-HB—3-span steel I-beam bridge over Deep Creek on Marlyn Ave., Essex, 15th District; Allied Contractors, Inc., 204 E. Preston St., $49,395.

BALTIMORE COUNTY—Mardo Homes, Inc., 2122 Maryland Ave., has plans completed for 50 residences, Meadow Rd., N. W. Old Home Rd., Elmwood Dev.; $270,000; owner builds.

BALTIMORE COUNTY—Mardo Homes, Inc., 2122 Maryland Ave., will build 56 residences, Old Home Rd. and Silverdale Rd., Elmwood Dev., cost $250,000; owner builds.

BEL AIR—Board of Education of Harford County received low bid from Davis Construction Co., 320 W. 24th St., Baltimore, for North Harford High School, Bush Corner; $1,229,400.

BETHESDA—Public Buildings Administration, Washington, D. C., received low bid from McCloskey Homes, Inc., Land Title Bldg., Philadelphia, Pa., for utility building, National Institute of Health, $948,000.

BETHESDA—Public Buildings Administration, Washington, D. C., received low bid from Condenser Service & Engineering Co., Hoboken, N. J., for boiler plant, boilers, etc., Building 11, National Institute of Health, $185,804.

CHEVERLY—Prince Georges General Hospital has selected Paul Ken, Hyattsville, as architect for proposed expansion program.

EASTON—Board of Education of Talbot County plans junior-senior high school for white and colored students.

EDGEWATER—County Commissioners of Anne Arundel County let contract to Windsor Construction Co., 2604 Frederick Ave., Baltimore, for County Police Station, $39,168.

FREDERICK—Fraternal Order of Eagles received low bid from Frederick Construction Co. for new lodge building, $134,950.

HAGERSTOWN—Herman L. Mills, City plans voting on $1,500,000 bond issue to be used for amortizing the new electric light plant cost.

PIKESVILLE—Department of Public Improvements, Baltimore, received low bid from Henry A. Knott, Inc., 2107 N. Charles St., Baltimore, for buildings for Maryland State Police Headquarters and Training School, $157,849.

ROCKVILLE—Montgomery County Board of Education plans proposed $5,031,529 school program for the next five years.

WESTMINSTER—Western Maryland College received low bid from Thomas Hicks and Sons, 106 W. Madison St., Baltimore, for infirmary.

WHITE OAK—Navy Department, U. S. Bureau of Yards and Docks, Washington, D. C., received low bid from Industrial Power Equipment Co., 615 Fallsway, Baltimore, for hoists in main laboratory building; Spec. 21751.

MISSISSIPPI

Jones County Electric Power Association received low bid from Walter Tillery and Son, Laurel, Miss., at $91,000, for headquarters buildings in Laurel and Waynesboro.

ABERDEEN—City plans Health Center.

AMORY—Town plans Health Center, $50,000.

ASHLAND—Board of Trustees of Ashland Consolidated School District plans school.

BELDEN—Lee County Board of Supervisors, Tupelo, plans school, $50,000.

BELZONI—Board of Commissioners of Humphreys County let contract to Oden Construction Co., Asher Bldg., Jackson, at $178,300 for Community Hospital.

BILOXI—Laboratory Equipment Corp., St Joseph, Michigan, plans plant south of Keesler Field.

BLUE MOUNTAIN—Blue Mountain College plans residence hall for students, $125,000.

BLUE MOUNTAIN—Blue Mountain College plans Fine Arts building, $100,000.

BROOKHAVEN—Supervisors of Lincoln County, let contract to Dickerson and Bowen, Brookhaven, for 7.5 mi. of hard surface roads in Lincoln County.

BRUCE—City let contract to F. D. Harvey, Memphis, & B. E. Walker, Jackson, $165,000 for water and sewer improvements and extensions.

CARROLLTON—Board of Supervisors of Carroll County, Vaiden, let contract to Stanley W. Newman Co., Inc., P. O. Box 1565, Mobile, Ala., at $47,840 for Carroll County Health Center, North Carolina.

CARTHAGE—Board of Supervisors has plans started for Leake County Agriculture High School for negroes near Walnut Grove, $200,000.

CARTHAGE—Leake County Board of Supervisors negotiated contract with M. T. Reed Construction Co., 162 Millsaps Ave., Jackson at $360,000 for Memorial Hospital.

CLARKSDALE—City plans water and sewer improvements.

COLUMBUS—City let contract to Phillips Concrete Products Co., Columbus, for improvement work on 11th St., North.

COLUMBUS—Board of Trustees of Institutions of Higher Learning, Sardis, plans engineering building annex, $500,000; dormitory unit replacement, $180,000 for Mississippi State College.

CRYSTAL SPRINGS—Acting U. S. Property and Disbursing Officer, State of Mississippi, Jackson, let contract to Campbell Construction Co., Jackson, for motor vehicle storage building.

DREW—Acting U. S. Property and Disbursing Officer, State of Mississippi, Jackson, let contract to B. Priester & Son, Meridian, for motor vehicle storage building.

ELLISVILLE—Town has revised plans in progress for hospital.

EUPORA—City plans water extension, sewerage and street paving, $100,000.

FAYETTE—Board of Supervisors of Jefferson County let contract to Wise Construction Co., Beverly Clarke, Jackson at $51,855 for addition to Jefferson County Courthouse.

FOREST—Scott County Board of Supervisors plans Health Center, $50,000.

GATLINBURG—Public Roads Administration, H. J. Snelman, Div. Engr., Arlington, Va., received low bid from Gatlinburg Construction Co., Gatlinburg, $117,291, for five reinforced concrete and stone masonry bridges with approaches, .309 mi.

GREENVILLE—William R. Burk, Associated Archt-Engrs., Pan American Bldg., New Orleans, La., has plans and specifications for parochial school for St. Joseph Catholic School.

GREENVILLE—City plans administration building, Municipal Airport.

GREENWOOD—Board of Supervisors of Leflore County let contract to Garber-Brooks Construction Co., 1508 N. Mill, Jackson at

(Continued on page 20)

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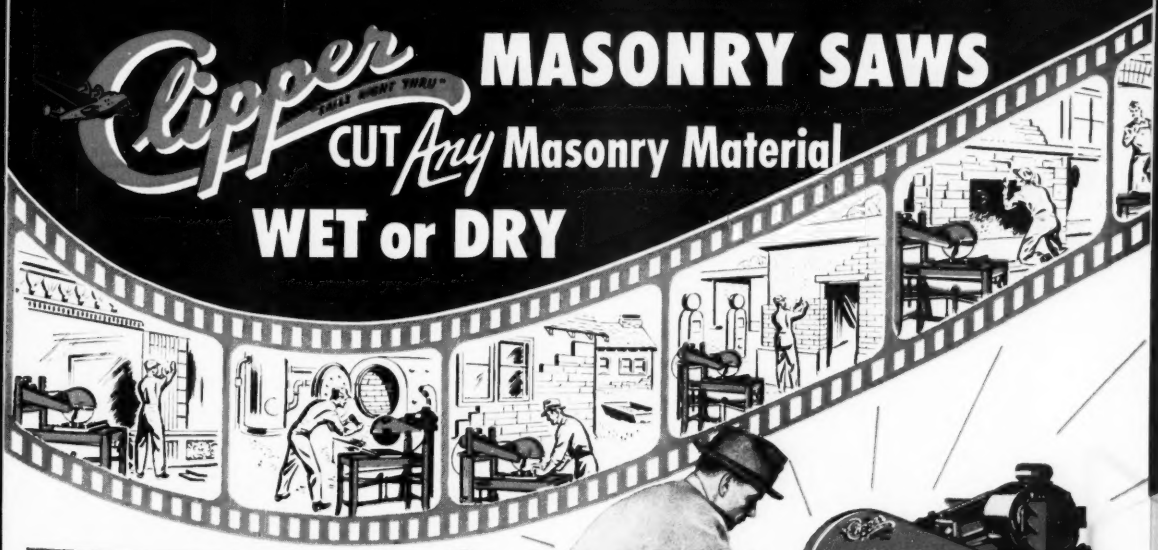

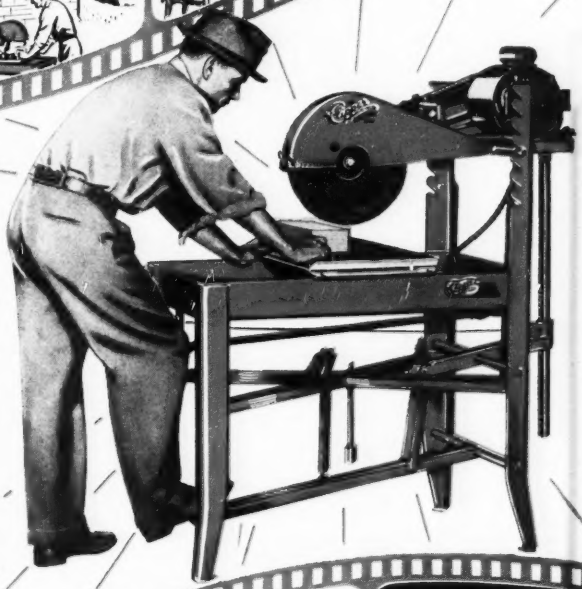

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Southern Construction Projects

MISSISSIPPI

(Continued from page 18)

$99,895 for Health Center.

GULFPORT — H. D. Shaw & Assoc., Shourds, Mogabgab & Bean., Smith & Lachin, all of Gulfport; have been selected as architects for Memorial Hospital Gulfport, $800,000.

GULFPORT—Board of Supervisors, Harrison County, George Boddie, County Engr., has surveys under way for proposed sand beach between Gulfport and Biloxi, may issue $1,500,000 bonds.

HATTIESBURG—Board of Trustees of Institutions of Higher Learning plans improvements and alterations to Mississippi Southern College.

HATTIESBURG — Southern Pine Electric Power Co., Evon Ford, announced plans for new line, and distribution system; $1,235,000.

HATTIESBURG — Hattiesburg Public School District has plans following schools: F. B. Woodley Elementary School, $328,897; Eaton Elementary School, repairs, improvements and additions, $42,000; junior high school, $626,000; two colored elementary schools, $134,789; colored high school, $164,743.

INVERNESS — J. R. Bradley Mayor, let contract to Delta Paving Co., 1502 N. Mill, Jackson, for paving new streets, $96,000.

JACKSON — Earle M. Jones, Chmn., Finance Committee, Young Mens Christian Association, plans YMCA building, $200,000.

JACKSON—Board of Supervisors of Hinds County let contract to M. T. Reed Construction Co., 162 Millsaps Ave., Jackson at $49,-250 for Part V of War Memorial Stadium.

JACKSON — Mississippi Hospital Commission considering plans for 350-bed general hospital, which would be the center of a group of medical buildings and the state-wide hospital building program now underway, $5,-000,000.

JACKSON—Board of Supervisors of Hinds County plans Health Center, $100,000.

JACKSON—Mississippi Livestock Association proposed building program at State Fair Grounds to be used for livestock shows, $1,-000,000.

JACKSON—John Hart Asher, has chosen Jones and Hats to prepare plans and specifications for office building, destroyed by fire, $500,000.

JACKSON — James T. Canizaro, Jackson, Archt., plans school and convent for St. Mary's Parish.

JACKSON — R. S. Naef, Jackson, Archt.-Engr., has plans in progress for completion of Negro Auditorium in New Park Area, $300,-000.

JACKSON—W. P. Bridges and M. T. Reed Construction Co. plan 145-unit rental project in western section of city, near G. I. Homes Subdivision, $445,000.

JACKSON—Trollo and Liddle, Archts., preparing plans and specifications for $1,000,-000 shopping center, North Jackson.

JACKSON—Board of Trustees of Institutions of Higher Learning, plans athletic field, $50,000; administrative and classroom building supplement, $85,000; science equipment, $10,000; supplement for construction of gymnasium, $35,000; extension for shop building $45,000 for Jackson College for Negro teachers.

JACKSON — Federal Government authorized allocation of $74,000 for study of flood control and waterways problems on Pearl River.

JACKSON—State Highway Department let contracts for following projects:

Wayne County—Grading, drainage structures and double bituminous surfacing, 1.612 mi.; Cobb Brothers Construction Co., Jackson, $31,284;

Monroe County—8.046 mi. grading, base preparation and double bituminous surfacing on Hwy. 6; J. B. Mcchael & Co., Inc., Memphis, Tenn., $64,873;

Chunky and Meridian—5.303 mi. grading, drainage and reinforced concrete pavement on U. S. Hwy. 80; Cobb Brothers, Jackson, $316,349;

Utica and Vicksburg—11.515 mi. grading, drainage and double bit. surf. on State Hwy. No. 3; R. H. Tyler, Louisville, $71,327.

KOSCIUSKO — Montfort Jones Hospital plans nurses' home, $50,000.

LAUREL—Board of Education let contract to T. W. Tillery, for Junior High School.

LEXINGTON — Board of Supervisors of Holmes County let contract to L. A. Harvey, 711 Eagle Ave., Jackson at $40,904 for Holmes County Health Center.

LUCEDALE — Board of Supervisors of George County let contract to J. P. Ewin, Inc., Chickasaw, Mobile, for Hospital.

MEADVILLE—City plans water extension, sewerage and paving work, $100,000.

MENDENHALL—Simpson County Board of Supervisors plans school, $203,000.

MERIDIAN—City plans improvement of all streets within city limits, which includes hard surfacing, estimated cost $265,000.

MERIDIAN—State Highway Commissioner, Sidney Roebuck, Jackson, let contract to Cobb Brothers, Citizen Bank Bldg., $700,000 for concrete surfacing 5 mi. in Lauderdale County.

MERIDIAN—State Highway Commissioner, Sidney Roebuck, Jackson, let contract to Pigford Brothers Construction Co., Pythian Bldg., $300,000, for overpass an approach to Hwy. 11 in Lauderdale County.

NATCHEZ—International Paper Co. plans housing project, $2,000,000.

NATCHEZ—Board of Supervisors of Adams County, received low bid from O. J. Ward, Inc., 753 Gladstone Blvd., Shreveport, for 0.86 mi. of Linewood-Carthage Rd., in Adams County.

NATCHEZ — City received low bid from Word Construction Co., 857,138, for widening Melrose Ave. and Ratcliff Sts., including concrete culvert.

NATCHEZ — City, let contract to O. J. Ward Construction Co., 755 Gladestone Blvd., for widening I Avenue and installing culverts, $40,000.

NONAPATER — Board of Trustees plans elementary school, $100,000.

OXFORD—Board of Trustees of Institutions of Higher Learning, Sardis, plans girls dormitory, $300,000; repairs, renovation and improvement on dormitory and to other buildings, and repairs, replacements and extension of steam and electric distribution system, $300,000 for University of Mississippi.

QUITMAN—Mayor and Board of Aldermen, received low bid from Jerry G. Alexander & Co., Hattiesburg, $115,774, for paving streets.

RIPLEY—Board of Supervisors of Tippah County contemplate erection of plant for W. B. Coon Co., Inc., Rochester, N. Y., for manufacture of women's shoes; $250,000.

SHELBY — Board of Trustees of Shelby Consolidated School District let contract to G. E. Bass & Co., P. O. Box 1033, Jackson, $186,886 for school.

SUMNER—Board of Trustees of West Tallahatchie Special High School District received low bid from Consolidated Contractors, P. O. Box 237, Memphis, Tenn., $437,478 for high school, two teachers' homes and teachers' apartment building.

TAYLORSVILLE—Southern Pine Electric Power Association has REA loan $1,235,000 for 601 miles line, to serve 2,709 rural consumers, for system improvements, two-way radio communication system, and completion of previously approved construction; Miss. 40ST Smith.

VICKSBURG—Corps of Engineers, received low bid from L. M. Ray Construction Co., 2220 Louisville St., Monroe, $496,748, for pumping station complete, at lower end of Walker Lake 3 mi. southwest of Greenwood.

WEST POINT—Board of Supervisors, Clay County plans road and bridge construction.

YAZOO CITY—City approved issuance of $750,000 bond issue for erection of a $12,000,-000 nitrogen fertilizer plant by Mississippi Chemical Corp.

YAZOO CITY — Board of Supervisors of Yazoo County contemplate 64-bed hospital to be known as King's Daughters Hospital, $750,000.

YAZOO CITY—St. Mary's Parish let contract to Garber-Brooks Construction Co., 1508 N. Mill St., Jackson, $58,785 for convent.

ZAMA — Attala County Board of Supervisors, Kosciusko, plans county school, $78,-000.

BELZONI—Acting U. S. Property and Disbursing Officer, State of Mississippi, Jackson, let contract to L. B. Priester & Son, Meridian, for motor vehicle storage building.

MISSOURI

COLUMBIA—Board of Education plans elementary school, $300,000.

CONCORDIA—St. Paul's College plans administration building and boiler house, $150,000.

EL DORADO SPRINGS—Sacosage Electric Cooperative has REA loan for 262 miles line, $905,000.

FULTON — Callaway Electric Cooperative has REA loan for 136 miles line, $470,000.

FULTON — Westminster College received low bid from Edward H. Kneelu, 522 W. McCarty, Jefferson City, for dormitory.

HAYTI—County Fathers of Pemiscot County contemplate construction of modern factory building to be occupied by Western Garment Co., St. Louis, $100,000.

JEFFERSON CITY—Lincoln University received low bid from George E. Baumann, Nevada, for dormitories, $763,688.

JEFFERSON CITY — State Highway Commission received low bids for projects in following counties:

New Madrid—3.540 mi. GE, bridge and grav. or cr. st. surf.; Porter-DeWitt Construction Co., Poplar Bluff, $64,525.

New Madrid—0.284 mi. GE, br. and grav or cr. st. surf.; Porter-DeWitt Construction Co., Poplar Bluff, $53,291.

New Madrid—4.394 mi. GE, bridges and grav. or cr. st. surf.; Porter-DeWitt Construction Co., Poplar Bluff, $93,197.

Dunklin—3.279 mi. GE, br. and grav. or cr. st. surf.; Paul Montgomery & J. W. Githens Co., Poplar Bluff, $31,434.

Pemiscot—2.006 mi. GE, br. and grav. or cr. st surf., Paul Montgomery & J. W. Githens Co., Poplar Bluff.

Stoddard—0.322 mi. GE, bridges and 22-foot P.C.C. Pav't.; Tobin Construction Co., Kansas City.

Nodaway—0.722 mi. GE, br. and grav. or cr. st. surf ; Fulton Construction Co., Kansas City, $30,664.

Nodaway—— mi. GE, br. and grav. or cr. st. surf.; Fulton Construction Co., Kansas City, $25,514.

Dallas—0.152 mi. GE, br. and grav. or cr. stone surf.; Universal Bridge Co , Inc., Kansas City, $40,586.

Pemiscot—Proj. No. GE, bridges and grav. or cr. st. surf.; Lewis W. Arnold, Mexico, Mo., $54,624.

Lewis—0.483 mi. GE, bridges and grav. or cr. st. surf.; E. L. Harlan, West Plains, $28,936.

JEFFERSON CITY—State, Forrest Smith, Governor, recommended an appropriation of $3,000,000 be made for purchase of site to erect a new State Office Building.

KANSAS CITY—Trianon Hotel Co., Barney L. Allis, Pres., plans $3,000,000, seven-story addition to Hotel Muehlebach.

LEBANON—Laclede Electric Cooperative let contract to Thaxton Engineering and Construction Co. at $310,511, for M-2 section, 221 miles 7,200-volt distribution lines.

LEE'S SUMMIT—Jackson County Board of Education plans grade school addition.

LEMAY—Board of Education plans school building program.

MARSHALL—First Baptist Church has preliminary plans completed for addition, Saline County; $130,000.

MT. VERNON—Ozark Electric Cooperative let contract to McGraw Construction Co., Inc., Middletown, Ohio, for 314.50 miles line, $491,869.

NEOSHO—New-Mac Electric Cooperative has REA loan, $650,000, for 83 miles line.

PLATTE CITY—Platte-Clay Electric Cooperative has REA loan, $315,000, for 165 miles line.

ST. LOUIS—Union Electric Co. of Missouri plans $26,000,000 power plant at junction of Mississippi and Meramec Rivers.

ST. LOUIS—Tower Grove Baptist Church, Rev. F. A. Lowry, Pastor, plans ten-year building program estimated to cost $1,000,000.

SAVANNAH—Andrew County Board of Education plans school improvements.

SEDALIA—City received low bid from Lippert Brothers Construction Co., 2800 N. Santa Fe, Oklahoma City, Okla., for South Sewage Treatment Plant, $136,000.

SPRINGFIELD—M. F. A. Milling Co. let contract to Seth E. Giem and Assocs., 801 Roland, Memphis, Tenn., for nine-story mill and office; $500,000.

SPRINGFIELD — St. Joseph Parochial School let contract to Chapman and Brauer, Springfield, for parochial school, $126,240.

NORTH CAROLINA

ALBEMARLE—Asheboro Station of Service Distributing Co., Inc., let contract to Sherrill Paving Co., Inc., paving improvements.

ASHEVILLE—Richard L. Coleman, F. B. Short and Z. B. Robinson, let contract to Wilburn and Son, Asheville, for $2,187,000 housing project on Grovewood Rd.

CAMP LEJEUNE—Navy Department, Public Works Office, received low bid from Fairbanks Morse Co., at $345,645 for replacement of Diesel electric generating unit at Marine Barracks.

CHARLOTTE—American Trust Co., let contract to J. L. Coe Construction Co., Builders Bldg., at $171,726, for bank.

CHARLOTTE — County Commissioners were authorized to issue $150,000 school bonds after July 1 to be used for county school improvements.

CHARLOTTE—Trustees of Covenant Presbyterian Church have campaign underway to raise funds for $700,000 construction program.

CLINTON—Local Government Commission, W. E. Easterling, Sec., Raleigh, sold $255,000

(Continued on page 22)

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Southern Construction Projects

NORTH CAROLINA

(Continued from page 20)

public hospital bond issue to Vance Securities Corp. and Associates.

CONCORD—Concord Graded School Board let contract to W. E. Dale Construction Co., $210,000 for erection of Long School, Logan School auditorium and addition to high school also Webb School building.

DUNN—City received low bid from T. A. Loving & Co., Goldsboro, for municipal improvements; contract I, sewer plant, $74,450. Contract II, sewer lines, $173,413. Contract No. III, water lines, $145,736.

DURHAM—Board of Education let contract to George W. Kane, Durham, $305,681 for gymnasium and vocational building for Durham High School.

DURHAM—Trustees of Library let contract to T. W. Poe & Son, Inc., Durham at $28,061 for additions to Stanford L. Warren Library.

DURHAM—City let contract to W. E. Baker Construction Co., Durham at $139,000 for fire station.

FAYETTEVILLE — American Bakeries Company of Fayetteville, received low bid from Southern Builders, Inc., Fayetteville at $108,000 for new garage and truck area.

FOREST CITY—Rutherford Electric Membership Corp. has REA loan, $1,108,000 for 615 miles line, to serve 2,950 rural consumers, system improvements, including 12 miles tie lines; N. C. 250 Rutherford.

GASTONIA — Local Government Commission, Raleigh, sold $800,000 bond issue to Scott, Horner & Mason & Associates for school improvements.

GASTONIA—City let contract to Dickerson, Inc., Monroe, $44,186, for street improvements.

GASTONIA—City received low bid from R. H. Pinnix, $87,537 for alteration to Gastonia High School.

GIBSONVILLE — Local Government Commission sold $50,000 bond issue to Kirchofer & Arnold Associates Inc., for water and sewer improvements.

GIBSONVILLE—City let contract to John Smith & Sons, Leakesville, $47,836 for municipal improvements.

GREENSBORO—Greensboro Country Club, Board of Directors, let contract to Waynick and Welker, at $117,524, for alterations and additions to building.

GREENSBORO — First Baptist Church plans new church and educational building; estimated $1,000,000.

GREENSBORO—City let contract to Lambeth Construction Co., Greensboro, for grading and street improvements.

GREENSBORO—Navy Department Officer in Charge of Construction, Naval Base, S. C., received low bid from McCrary Piping & Heating Co., 575 Meeting, Charleston, S. C., for installing Diesel engines and accessories.

GREENSBORO—City Council let contract to Thompson-Arthur Construction Co., $31,762 for water and sewer installations on Lee St.

GREENVILLE—Board of Trustees Greenville City School Administration, received low bid from O. W. Godwin, $66,887 for South Greenville Elementary School.

HIGH POINT—Young Men's Christian Association has plans nearing completion for $700,000 addition.

JASPER—Craven County Board of Education let contract to M. L. Skinner, New Bern, $35,380 for vocational shop and physical education building.

KINSTON—Caswell Training School, North Carolina Hospitals Board of Control let contract to O. W. Godwin, Dunn, $500,285 for Idiot Colony Buildings.

LAURINBURG—W. G. Butler, Mayor, let contract to Z. A. Sneeden's Sons, Wilmington, $54,882, for street improvements.

LEJEUNE — Public Works Office Marine Barracks, received low bid of $725,865 from Skinner & Ruddock, Inc., Charleston, S. C., for field house.

MOORESVILLE—Drs. G. W. Taylor & W. W. Painter, let contract to Barger Construction Co., Mooresville at $30,755 for Doctor's Clinic.

MORGANTON — Burke-McDowell Electric Membership Corp. has REA loan, $400,000 for 190 miles line, to serve 551 rural consumers, system improvements, including 8 miles new tie line, and for two-way radio communication systems.

NEW BERN — Board of Directors, East Prong Mosley's Creek, Inc., let contract to J. S. Hill Construction Co., Washington, N. C., for clearing right-of way and excavation 14,828 lin. ft. of East Prong of Mosley's Creek near Dover, in No. 3 Township, Craven County.

RALEIGH—Cameron Villiage Inc., let contract to York Building Co., at $250,000, for store building, Daniels St., Cameron Village.

RALEIGH—Clark Avenue Apartments Inc. let contract to York Construction Co., at $400,000 for apartments, Clark Ave.

RALEIGH — State Highway & Public Works Commission let contracts for projects in following counties:

Sampson-Pender — BS, 3-7-33-17; Towles-Cline Construction Co., Wilmington, $150,685;

Pitt—2-556; Barrus Construction Co., Kinston, $109,296;

Halifax — 1384; Dickerson, Inc., Monroe, $128,649;

Rockingham—5913, W. E. Graham & Sons, Cleveland, $172,086.

Chatham — Proj. No. 4075; Rea Construction Co., Pineville Rd., Charlotte, $351,227;

Guilford—Proj. No. 5325; Thompson-Arthur Construction Co., Greensboro, $508,251;

Duplin—Proj. No. 2223; Wayne Engineering and Construction Co., Mt. Olive, $162,110.

RALEIGH—State Highway Commission received low bids for projects in following counties:

Pender—Grading, traffic bound macadam, sand asphalt surface course and structures, 8.22 mi. Towles-Cline Construction Co., Wilmington, $150,685;

Pitt—Sand asphalt surface course on 18.3 miles, Barrus Construction Co., Kinston, $100,296;

Halifax—Grading, traffic bound macadam, bituminous concrete binder and surface course on 7.61 miles, Halifax-Dickerson Co., Monroe, $128,649.30; in Scotland Neck; Dickerson Co., Monroe, $128,249;

Rockingham—Grading, concrete pavement and structures on 1.14 mi, on US 220 from a point approx. 4.7 miles north of Stoneville north to a point on US 220 at Virginia State Line; W. E. Graham & Sons, Cleveland, $172,086

RALEIGH—Methodist Orphanage let contract to Davidson and Jones, $68,000 for brick dormitory.

THOMASVILLE—City, let contract to Gilbert Engineering Co., Statesville, $212,297, for street paving and incidental underground work.

RALEIGH—Carolina Power and Light Co. expects to spend $33,500,000 on construction program in period 1949-1952, including $5,500,000 previously spent, first four months of 1949.

RALEIGH—Country Club Properties, Inc. has purchased Country Club Homes, $500,000 apartment development at 2512 Fairview Rd.

SALISBURY — Westview Courts, Inc., received low bid from Wagoner Construction Co., Salisbury, at $181,850, for 33 apartments, West View Courts.

SYLVA — Local Government Commission, W. E. Easterling, Sec., Raleigh, sold $200,000 bond issue to R. S. Dickson & Co. & Associates for school improvements.

WADESBORO — The Local Government Commission, W. E. Easterling, Sec., Raleigh, sold $150,000 bond issue to J. Lee Peeler & Co., Inc. & Associates for water and sewer improvements.

WASHINGTON—Local Government Commission, W. E. Easterling, Sec., Raleigh, sold $300,000 bond issue to Alex Brown & Sons & Associates for electric light improvements.

OKLAHOMA

ADA—Board of Education School District No. 19, plans Willard Grade School, $125,000.

BARNSDALL—Board of Education let contract to L. E. Smith, Construction Co., Tulsa, $75,927 for school.

BARTLESVILLE — City received low bid from Robison and Duckworth, Coffeyville, Kan., at $82,000 for Contract 1—Administration building and utilities; from Standard Paving Co., Tulsa, Okla., at $94,972 for Contract 3—entrance roads, concrete taxiway No. 2, hardstand for Municipal Hangar No. 1, North Hangar Area and Utilities; Walter Naslert Co., Oklahoma City at $304,600 for Contract 5—Bartlesville Municipal Hangars —No. 1, 2, 3, 4 and 5.

BETHANY—Board of Education plans high school.

BLAIR—Department of Interior, Altus, let contract to Stamey Construction Co., Hutchinson, Kansas, $98,958, for earthwork and structures.

CHICKASHA—City may vote on $1,500,000 bond issue for soft water for the city.

COLLINSVILLE—Verdigris Valley Electric Cooperative has REA loan, $510,000 for 397 miles line.

CORDELL — Kiwash Electric Cooperative has REA loan, $260,000 for 122 miles line.

CRESCENT—Board of Education let contract to Hughes Construction Co., Edmund, $88,111 for school.

EL RENO—Board of Education let contract to Fred Corlee, El Reno, $120,787 for school and alterations to present building.

FREDERICK — Board of Education received low bid from W. L. Scott, Sulphur, $180,000 for high school.

LAKE MURRAY—State Planning and Resources Board let contract to Burton-Weller Construction Co., Ardmore at $527,654 for lodge improvements.

LINDSAY—Rural Electric Cooperative has REA loan, $540,000 for 284 miles line.

MULHALL—Logan County Board of Education plans remodeling of present school buildings and addition of new classrooms $84,000 bond issue voted.

OKARCHE — Board of Education plans school gymnasium.

OKLAHOMA CITY—Oklahoma City School Board approved $3,000,000 bond issue for additional classrooms.

OKLAHOMA CITY—State Highway Commission, received low bids for projects in following counties:

Canadian, Garfield and Grant — 35.6 mi. Myron Groseclose, 30 & Council Rd., Oklahoma City, $46,383;

Kiowa—6.979 mi., Poston Sand & Gravel Co., Lawton, $30,244;

Garfield—2.413 mi., Myron Groseclose, 30 & Council Rd., Oklahoma City, $28,308;

Kingfisher — .080 mi., Curtis Cunningham Construction Co., 1439 S. Gary Pl., Oklahoma City, $46,328;

Garfield—5.014 mi., Myron Groseclose, 30 & Council Rd., Oklahoma City, $57,519;

Craig, Creek, Okfuskee, Mayes, Ottawa, Delaware—42.4 mi., Public Construction Co., 1200 S. Cherokee, Muskogee, $49,413;

Jefferson — 4.929 mi., Honegger Brothers Construction Co., Kingfisher;

Jefferson — 4.026 mi., Honegger Brothers Construction Co.;

McCurtain—72.05 mi., S. E. Evans Construction Co., $72,407;

McCurtain — 0.974 mi., Amis Construction Co., $31,825;

Greer—2,700 ft., Kellner Jetties Co., Topeka, Kan.;

Tillman — 4.134 mi., Brewer-McMichael, Holdenville, $22,731;

Kiowa — 6.936 mi., Douglas & Rickstrew, Meridian, $33,134;

Garfield—8.968 mi., Stone Construction Co., Ada, $79,492;

Nowata—6.505 mi., W. D. Fulton Construction Co., 2304 NW 28th, Oklahoma City, $61,666;

Garvin — 3.061 mi., Douglas & Rickstrew, Meridian, $48,183;

Nowata—1.120 mi., Hunter Construction Co., Ada, $87,766;

Dewey — 5.569 mi., Standard Paving Co., Tulsa, $80,612;

Washita — 1.255 mi., Stamey Construction Co., Altus;

Lincoln—3.496 mi., W. D. Fulton Construction Co., 2304 NW 28th, Oklahoma City, $45,617;

Muskogee—0.169 mi., J. A. Raines, Muskogee, $37,044;

Love—3.956 mi., Fulerton & Hussey, Oklahoma City, $36,322;

Love—0.780 mi., S & W Construction Co., Oklahoma City, $46,984;

Osage — 20.2 mi., Erwin Construction Co., Pawhuska, $54,061;

Grady—3.939 mi., Myron Groseclose, Oklahoma City, $51,548;

Craig — 4.986 mi., Oklahoma Construction Co., Muskogee, $40,807;

Woodward—1.038 mi., Austin Bridge Co., 1000 Singleton, $23,282;

Beaver, Cimarron, Harper and Woods—66 mi., Broce Construction Co., Woodward, $139,094;

McCurtain — 7.645 mi., Amis Construction Co., 1647 Exchange Ave., Oklahoma City, $218,379;

Nowata—.289 mi., R. R. Tway & Co., 710 NE 19th, Oklahoma City, $348,961;

Beaver — 7.999 mi., Standard Paving Co., 2139 E 11th, Tulsa, $180,358;

Woodward—2.955 mi., Austin Bridge Co., 1000 Singleton, Dallas, Tex., $116,627;

Johnston—6.945 mi., H. D. Youngman, Hales Bldg., Oklahoma City, $238,596;

Johnston — 7.697 mi., H. D. Youngman, $250,954;

Johnston and Murray — 546 mi., H. D. Youngman, $192,784;

McCurtain—6.880 mi., S. E. Evans Construction Co., Fort Smith, $145,193;

Caddo—5.935 mi., Austin Bridge Co., Dallas, $121,575;

Caddo—6.804 mi., Austin Bridge Co., $125,941;

Dewey and Blaine — 7.677 mi., Standard Paving Co., Tulsa, $155,282;

Beaver—.113 mi., E. E. Barber Construction Co., Fort Smith, $107,324.

OKLAHOMA CITY — Board of Education

(Continued on page 24)

CHOOSE "QUICK-WAYS" FOR SURE PROFITS

REG. U. S. PAT. OFF

In all power shovel applications, capacity and utility are essentials. A truck shovel must have high speed mobility, be immediately convertible, and have adequate capacity to be economical on every job. A *"QUICK-WAY"* has all these fundamentals plus a long list of others.

"QUICK-WAYS" are designed for full truck speed, on or off the highway. Mounted on any standard truck, the working parts provide perfect operating balance for the truck shovel. All-steel construction gives built-in strength and lightness for maximum capacity and stability.

You get more utility out of a *"QUICK-WAY"* fully equipped, than any comparable equipment. Each *"QUICK-WAY"* is easily converted in minutes from Shovel to Crane, Dragline, Clamshell, Pile Drive, Scoop, Trench Hoe, Backfiller, etc. Buy only the attachments you want; your *"QUICK-WAY"* does more jobs better.

Parts are rugged and simple, requiring a minimum of servicing and having proved ability to take a life long beating. Many interchangeable parts and easy accessibility simplify maintenance and repair. From engine to attachment, every *"QUICK-WAY"* part will deliver its capacity rating and more.

The essentials built into every *"QUICK-WAY"* mean sure profits on a small investment; economical to buy, economical to use, it's one of the most useful machines you can own. There's a *"QUICK-WAY"* owner near you; ask HIM.

MODEL E: 4/10 cu. yd. capacity, mounts on any standard 5-ton truck.
MODEL J: 1/4 cu. yd. capacity, mounts on any standard 1½-ton truck.

"QUICK-WAY" TRUCK SHOVEL DISTRIBUTORS:

FLORIDA-GEORGIA TRACTOR CO.
Jacksonville, Tallahassee, Orlando, Lakeland, Tampa and Miami, Florida; Savannah and Waycross, Georgia

HAMPTON RDS. TRACTOR & EQUIP. CO.
Norfolk

NORTH CAROLINA EQUIPMENT CO.
Raleigh, Charlotte, Asheville, Wilmington, Guilford

FREE STATE EQUIPMENT CO.
Baltimore, Md.

POWER EQUIPMENT COMPANY
Knoxville, Chattanooga

RAY BROOKS MACHINERY CO.
Montgomery, Mobile

RISH EQUIPMENT CO.
Charleston, Cincinnati, Clarksburg, Richmond, Roanoke

SOUTHERN EQUIPMENT SALES CO.
Columbia

"QUICK-WAY" TRUCK SHOVEL COMPANY
DENVER, COLORADO
Worldwide Distributor Sales and Service

PIONEER IN POWER SHOVELS FOR TRUCK MOUNTING AND STILL THE LEADER

Southern Construction Projects

OKLAHOMA

(Continued from page 22)

let contract to Dave Martin Construction Co., 2102½ Colcord Drive, Oklahoma City for John Adams Elementary School.

OKLAHOMA CITY — Commodore Apartments plan apartment-hotel east of May Ave. on Grand Blvd.; $2,000,000.

OKLAHOMA CITY—State Highway Commission, received low bids for projects in following counties:

Nowata—Reconstruction of 120½ ft. I beam span bridge, SS & W Construction Co., Oklahoma City, $35,680;

McCurtain—.053 mi. bridges, O. R. Gragg, Henryetta, $80,018;

Craig — .038 mi., Gaines Brothers, Miami, Okla., $50,507.

OKLAHOMA CITY—Grand River Authority will close its $9,300,000 loan transaction soon, including $1,280,000, for additional hydro-electric unit at Pensacola, $3,500,000 for Chouteau plant, $1,885,000 for additional general equipment there, $1,850,000 for substation and transmission facilities and $550,000 for contingencies.

SEMINOLE—City, plans sewer and sewage disposal facilities, $55,000 bond issue voted.

SEMINOLE—Canadian Valley Electric Cooperative has REA loan, $755,000 for 375 miles line.

STARR COUNTY — Continental Oil Co. plans enlargement of natural gasoline plant, 45 miles northwest of McAllen and 20 miles northeast of Rio Grande City; $1,500,000.

TULSA—Oklahoma Gas & Electric Co. to file registration statement with Securities & Exchange Commission, covering $10,000,000 in new bonds to retire short-term obligations and to provide funds for construction.

WEWOKA—Board of Education plans high school physical building, $77,000.

WILBURTON—Kiamichi Electric Cooperative has REA loan, $700,000 for 451 miles line.

WOODWARD—Northwestern Electric Cooperative has REA loan, $475,000 for 192 miles line.

WOODWARD—Northwestern Electric Cooperative has REA loan, $700,000 for 516 miles line.

SOUTH CAROLINA

ANDERSON—Dan F. Miller let contract to M. B. Kohn, Columbia, for $630,000 Bailey Courts housing project.

BARNWELL—Barnwell County let contract to Manor Construction Co., Columbia, at $61,743, for health center.

BARNWELL—Salkehatchie Electric Cooperative has REA loan, $345,000 for 99 miles line.

BEAUFORT—Navy Department received low bid from Kinghorn Building Supply Co., Beaufort at $51,507 for 3 additional married officers' quarters.

CALHOUN FALLS—Board of Trustees received low bid from Brissey Lumber Co., $66,536 for addition to high school.

CANTON—First Baptist Church let contract to Hickory Construction Co., for church structure; $144,653.

COLUMBIA—State Highway Department let contracts for projects in following counties:

Colleton—S. C. Doc. 15,250, etc.; W. L. Cobb Construction Co., Decatur, Ga., $158,359;

Kershaw—S. C. Doc. 28,260, etc.; Cherokee, Inc., Columbia, $118,241;

Sumter—S. C. Doc. 43,274 (alt. 2); Boyle Construction Co., Sumter, $114,452;

Richland—S. C. Doc. 40,307, etc.; Cherokee, Inc., Columbia, S. C., $82,182.

COLUMBIA—state Highway Department received low bids for projects in following counties:

Richland-Newberry—Doc. 40,247, etc.; Sumter & Co., Inc., Whitmire, $385,000;

Charleston-Georgetown — 1.735 mi. of graded and earth-type base course on north approach to North Santee River and placing of earth-type base course on embankment between North and South Santee Rivers in Charleston and Georgetown counties on U. S. 17; C. Y. Thomson Co., Greenwood, $121,114;

Beaufort-Jasper—7.905 mi. road; Claussen-Lawrence Construction Co., 1394 Gwinnett, Augusta, Ga., $92,705;

Berkeley—15.053 mi.; road; Claussen-Lawrence, $178,261;

Clarendon—7.521 mi. road; J. F. Cleckley and Co., Orangeburg, $67,684.

Horry—9 mi. of roads; Boyle Construction Co., Sumter, $123,725.

Abbeville—15.524 mi. roads; B. L. Jones & Co., Winder, Ga., $137,846;

Richland-Newberry—Doc. 40,247, etc.; Sumter & Co., Inc., Whitmire, $385,069.

Barnwell—26.6 mi.; Towles Cline Construction Co., Wilmington, N. C., $82,827;

Cherokee-Spartanburg — 12.5 mi.; Sloan Construction Co., Inc., Peoples National Bank Bldg., Greenville, $87,491;

Greenville—4.5 mi. of road; Sloan Construction Co., Inc., $24,850;

Horry—23.9 mi. road; Towles-Cline Construction Co., Wilmington, N. C., $72,363;

Marlboro—15.6 mi.; Ballenger Paving Co., Paris, S. C., $78,064;

Aiken—3.6 mi.; Claussen-Lawrence Construction Co., 1394 Gwennitt, Augusta, Ga., $88,191;

Anderson—3.354 mi.; Sloan Construction Co., Inc., Peoples National Bank Bldg., Greenville, $40,052;

McCormick — 7.5 mi.; Sloan Construction Co., Inc., $89,934;

Union — 6.850 mi.; Blankenship Brothers, Charlotte, N. C., $68,988;

Sumter—.927 mi.; Boyle Construction Co., Sumter, $114,452;

COLUMBIA—First Baptist Church let contract to M. B. Kahn Construction Co., 1113 Blossom, for alterations; $105,000.

COLUMBIA—Main Street Methodist Church let contract to Mechanics Construction Co., 1325 Main, Columbia, at $140,565, for alterations and additions.

COLUMBIA—Thomas & Howard let contract to General Construction Co. for warehouse; $100,000.

COLUMBIA—South Carolina Sanatorium, State Park, received low bid from T. E. Moore, Taylor Bldg., Columbia, at $365,200 for Palmetto Division and Kitchen.

COLUMBIA—Board of School Commissioners let contract to George R. Price, Columbia, $61,000 for Moore School.

COLUMBIA—State Hospital let contract at $190,655 to Charleston Constructors, Inc., for store room.

DARLINGTON-HARTSVILLE — Darlington County let contract to Harlie Quattlebaum Construction Co., Florence, at $50,656 for Health Center.

DENMARK — Board of Trustees received low bid from General Construction Co., Charleston, $99,382 for school additions.

GREENVILLE—City let contract to Fiske-Carter Construction Co., Masonic Temple, Greenville, for Municipal Curb Market and Agricultural Center, $150,000.

GREENWOOD—Young Men's Christian Association let contract to G. E. Moore Co., Greenwood, at $192,715, for YMCA building.

LANCASTER—First Methodist Church let contract to Crosland Construction Co., 1625 Harden, Columbia, S. C., at $131,200, for church building.

NORTH CHARLESTON — West Virginia Pulp and Paper Co. plans $4,500,000 improvement program.

MYRTLE BEACH—Building Committee of Common Council let contract to Moore Construction Co., Inc., Myrtle Beach at $115,500 for City Hall.

RIDGELAND—Palmetto Electric Cooperative has REA loan, $460,000 for 245 miles line.

ROCK HILL—City let contract to C. Y. Thomason Co., Greenwood, for sewerage improvements; clay pipe at $71,587, concrete pipe, $71,152.

ROCK HILL—First Baptist Church let contract to George A. Creed & Sons, 1613 Sumter, Columbia, at $141,350, for church.

ROCK HILL—City received low bid from Boyd and Goforth, Inc., Pineville Road, Charlotte, N. C., $537,000 for waterworks improvements.

SPARTANBURG — School for Deaf and Blind, Cedar Springs, let contract to W. M. Fine, 497 W. Main, Spartanburg, $178,100 for dormitory.

SUMTER—City let contract to Boyle Construction Co., Sumter, $188,000 for Fulton Street Sewage Pumping Station and extensions.

TAYLORS — Southern Bleachery & Print Works, Inc., let contract to Peden Construction Co., 39 Mayberry, Greenville, $58,246 for sewers and sewage treatment.

WHITMIRE—Whitmire Memorial Association let contract to Coulter & Co., Columbia for War Memorial.

TENNESSEE

East Tennessee Natural Gas Co. has placed privately with three insurance companies, new issue of $7,700,000 first-mortgage pipe line bonds; proceeds to be used in financing company's projected 172-mile natural gas pipe line from Greenbrier, Tenn., to Oak Ridge.

ASHLAND CITY—Cheatham County Board of Education plans high school, $200,000.

BLOUNT COUNTY — Public Roads Administration, Gatlinburg, received low bid from Gatlinburg Construction Co., Gatlinburg, for four concrete bridges.

BRISTOL—Sullivan County Board of Education received low bid from Cassell Brothers, Kingsport, $296,880 for additions to Haynesfield and Holston Heights Schools.

CHATTANOOGA—City let contract to Stein Construction Co., 201 Chestnut St., $33,696 for sewer line.

COOKEVILLE—City will soon call for bids for sewage disposal plant and extend and improve sewer system, $800,000.

COVINGTON—City received low bid from Volz Construction Co., Ripley, $87,498 for sewer improvements.

FRANKLIN—Williamson County Court approved $300,000 bond issue for educational purposes.

KINGSPORT—Kingsport Long Island let contract to Bush Building Co., Nashville, $119,000 for water system.

KNOXVILLE — County Commission, let contract to Garrett & Farris Construction Co., P. O. Box 81, $383,574, for Boyd's bridge.

MARYVILLE—City plans West Side Elementary School, $300,000.

MARYVILLE—Maryville College plans arts center, $350,000.

MEMPHIS — Massey-Harris Co., Racine, Wis., plans branch factory, $2,000,000 expenditure.

MEMPHIS—W. T. Rawleigh Co., Freeport, Ill., let contract to H. F. Vann & Sons, Memphis, for factory addition, $250,000.

MEMPHIS—Corps of Engineers, Memphis District let contract to Hyde Construction Co., Box 385, Jackson, $257,556 for Fairfax Pumping Station.

MEMPHIS — Gerber's Department Store plans $750,000 modernization program.

NASHVILLE—State sold $12,000,000 various purpose bonds to group managed jointly by Chase National Bank and Bankers Trust Co.

NASHVILLE—Methodist Board of Education, 310 Broad, plans $600,000 office building.

NASHVILLE—State Highway Department, has $44,000,000 Federal Highway Program scheduled.

NASHVILLE — State Highway Department plans projects in Clay, Cumberland, Fentress, Putnam, Van Buren, Warren, Cheatham, Dickson, Sullivan, Henry, Jackson, Marshall, Moore, Perry, Robertson, Trousdale, Hardin, Haywood, Carter, Bradley, Scott, Blount, Claiborne, Loudon, Monroe, Morgan, Bledsoe, McMinn, Polk, Montgomery, Robertson, Stewart and Weakley counties.

NEW JOHNSONVILLE—Tennessee Valley Authority, Knoxville, will construct immediately, under supervision of John M. Counts, Project Mgr., steam plant, on 400-acre site, on east shore of Kentucky Reservoir, 66 miles west of Nashville, on North Carolina & St. Louis Railway; following have equipment contracts: General Electric Co., Schenectady, N. Y., at $7,448,700, three turbo-generator units; Combustion Engineering Co., New York City, at $4,338,640, three boilers; R. L. Harris Co., Knoxville, Tenn., at $102,524, six tractors; Buchanan Rooney Equipment Co., Nashville, Tenn., at $25,935, mobile crane; and Harnischfeger Corp., Milwaukee, at $52,634, six-yd. with crane; C. E. Blee, Chief Engr.; J. S. Bowman, Chief Planning Engr.; and R. A. Monroe, Chief Design Engr.; cost $54,000,000, including switchyards.

OAK RIDGE—U. S. Atomic Energy Commission announced plans for a $19,000,000 construction and improvement program to be undertaken at the Oak Ridge National Laboratory, of this amount, approximately $10,500,000 will be for new research facilities and approximately $4,200,000 for renovation of existing research facilities and utilities; the remainder will be used for yard work and service facilities.

OAK RIDGE — Roane-Anderson Co. received low bid, $129,711 from Arthur M. Gelden Co., 1240 N. Wells St., Chicago, Ill., for dwellings.

PARIS—City let contract to W. L. Mailey & Co., Nashville, $228,410 for water filtration plant and distribution system.

SPENCER — Board of Education let contract to Dews Lumber Co., McMinnville, $112,531 for combination auditorium-gymnasium.

WINCHESTER — Franklin County sold $230,000 bond issue to J. C. Bradford & Associates of Nashville for school improvements.

TEXAS

Panhandle Refining Co. plans $1,000,000 expansion.

ABILENE—McMurry College let contract to Rose Construction Co., P. O. Box 814, Abilene, $514,500 for student life center.

ALICE—Alice Country Club approved $200,000 bond issue for new club house, swimming pool, and site improvements.

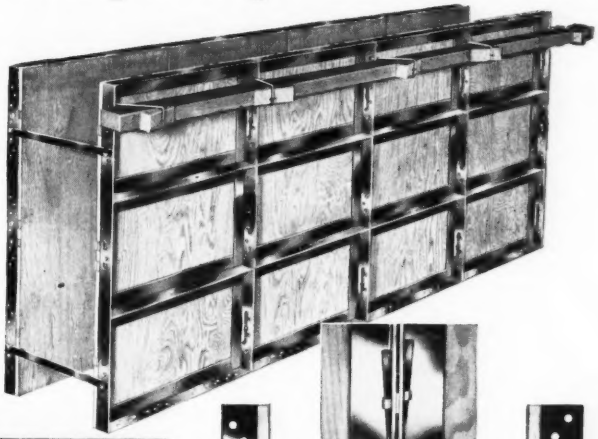
AUSTIN—University of Texas plans pharmacy building, $1,250,000.

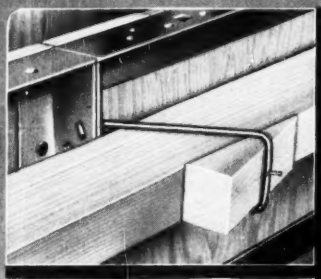
(Continued on page 52)

UNI-FORMS' *Simplicity* Cuts Costs

. . . On Any Forming Job

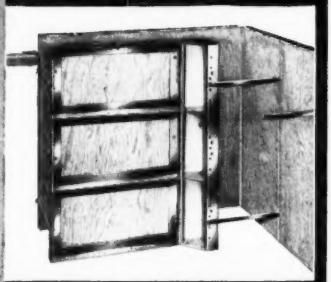
SAVE TIME
SAVE LABOR
SAVE MATERIAL





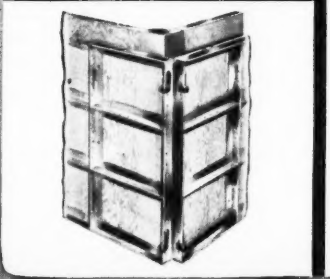
ALIGNMENT

Required on 1 side only—easily placed—hooked to steel frame with LINER CLAMP.



INSIDE CORNERS

RIGID . . . All steel . . . prefabricated forms—provide simple, easy, accurate inside corner forming.



OUTSIDE CORNERS

A corner angle with PANEL LOC clamps insures a tight, automatically accurate, vertical corner. No additional tying necessary.

UNI-FORMING

The simple assembly of UNI-FORMS with Uni-Form Ties and Tie Keys guarantees a rigid concrete form, insuring automatically accurate walls from top to bottom.

UNI-FORMS . . . a system of forming . . . ready to use when they reach the job. *Anyone* can assemble them *anywhere* . . . no special training or experience necessary . . . they are "simplicity personified."

UNI-FORMS *always* insure the lowest all-around costs . . . the best job . . . in the least time. Do *more* jobs in less time with UNI-FORMS.

Write for the new 32 page UNI-FORM Catalog.

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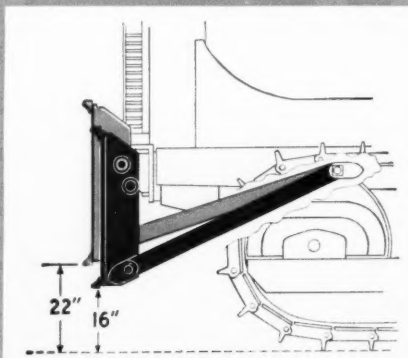
HD-19 TORQUE

OUTPUSHES

. . . On Any Job, Any Time

***Shortens* Time in Cut.** You get heaping loads fast with the BIG HD-19 pushing. A powerful, 40,000 lb. tractor with long, wide, sure-gripping tracks . . . it gets in there and really "bears down."

What's more — makes contact faster with any make or type scraper combination — no trundling along behind trying to catch up. Hangs on, too, throughout entire loading period — no losing scraper, no sudden, jarring contacts because there's no stopping to shift. Torque Converter automatically synchronizes HD-19's speed with speed of loading unit. And with a final, extra boost, gets scraper off to fill with a flying start. Result — MORE YARDS MOVED AT LESS COST PER YARD.



NEW HEAVY-DUTY, ADJUSTABLE PUSHER PLATE NOW AVAILABLE FOR HD-19. It's bigger, stronger, heavier — weighs 1,600 lbs. It's adjustable — operates at 16" or 22" above ground . . . pushes any make scraper or self-powered hauling unit.

CONVERTER TRACTOR

OUT-'DOZES

Of Year, Under Any Conditions

Shortens **Time on Every Bulldozing Job.** The heavier, sure-footed, better-balanced HD-19, working with especially matched bulldozers — plus having the advantages of the Torque Converter drive — assures greater output on bulldozing. Operator can take a deeper cut, roll bigger loads faster . . . and get back for the next pass quicker — has a high reverse of 5.5 m.p.h. Load and terrain and use of throttle govern forward speed . . . and there's no worrying about engine stalling when tractor is overloaded — keeps running, regardless.

And because the HD-19 is on tracks it can be used everywhere on the job — on wet, sandy or rocky going . . . no job too tough for it to handle. "Seeing is believing" . . . watch it outperform. Contact your Allis-Chalmers dealer.

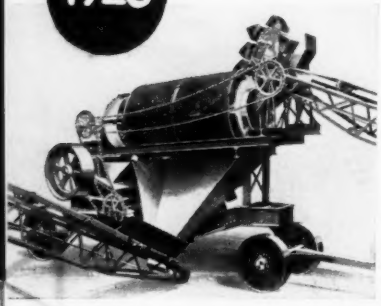
ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

ORIGINATOR OF THE TORQUE CONVERTER TRACTOR

Year after year Cedarapids gives

1923



BACK in 1923, the Cedarapids One-Piece-Outfit put high capacity aggregate production *on wheels* for the first time. Year after year since then, Cedarapids portable plants have been improved, increasing production from 20 to 250 tons per hour and even more. The use of big roller bearings, manganese steel, rubber tires, V-belts, universal drives, horizontal vibrating screens and hundreds of other improvements have resulted in aggregate producing plants that are world famous for big volume production with the lowest possible operating and maintenance costs, easy portability and highest quality aggregates. Today, there's a full line of Cedarapids Portable Crushing and Screening Plants, in sizes and types to fit every product requirement and every job.

20 tons per hour with this Cedarapids "first", built in 1923...the One-Piece-Outfit consisting of a bucket elevator, a jaw crusher and a revolving screen, all on wheels. With this first really portable unit, the aggregate plant could be moved wherever necessary to crush and screen whatever was closest to the job, without loss of time or profit-eating costs.

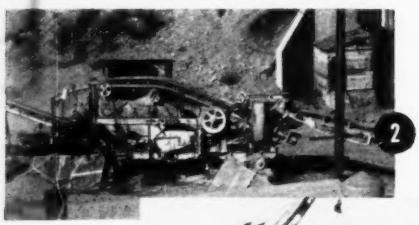
1949 CRUSHING and SCREENING PLANTS

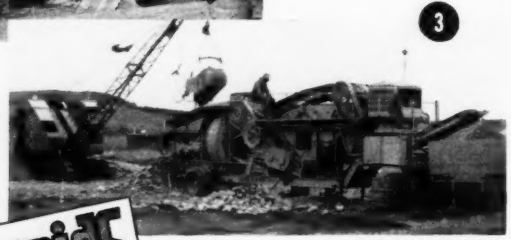
1 Cedarapids Master Tandem producing aggregate for paving a new 4-lane free way through Santa Ana Canyon. With capacities up to *250 tons per hour*, the Master Tandem is the all-purpose gravel plant with the versatility to handle many different contract requirements.

2 This Cedarapids Junior Tandem makes traffic-bound material for a modern stone and sand company, whose postwar renovation program has raised the plant capacity from *500 tons* to *1500 tons per day*.

3 Cedarapids Pitmaster on a Canadian job easily produces *35 cu. yds. per hour*, with 55% crushing. The Pitmaster Straightline is the smallest complete Iowa portable crushing and screening plant.

4 Capacities of *250 tons per hour, and more*, with Cedarapids Unitized Crushing and Screening Plants, consisting of any combination of the basic primary crushing, scalping, secondary crushing, and wet or dry screening units. Each unit can be used alone or in combination with the others to handle *every* aggregate job.





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Built by IOWA

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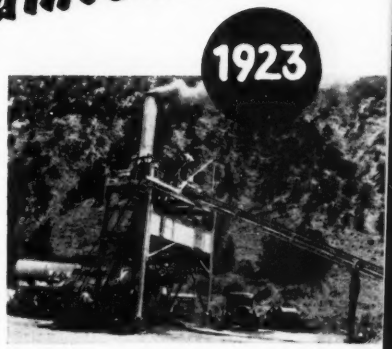
s you more production more profit less maintenance!

TIME has brought many changes in machines and methods since the first Cedarapids Pre-Mix Asphalt Plant was setting records of 30 tons per hour . . . high production for the first portable plant of the 20's! Now the need for output as high as 100 tons per hour of accurately batched materials has resulted in the modern Cedarapids line of Bituminous Mixing Plants, known throughout the industry for their great capacities, low upkeep and low operation costs. Made up of matched screens, pugmills, batchers, elevators and other component parts, they are built for maximum efficiency, easy portability and economy. They produce a steady flow of thoroughly mixed materials.



30 tons per hour with the first Cedarapids Pre-Mix Asphalt Plant. Continuing research and the development of increasingly better machines have enabled Cedarapids to give you greater production of bituminous mixes at lower operating costs that assure good profits.

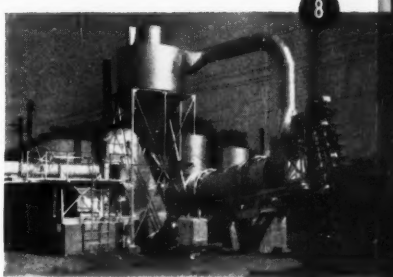
BITUMINOUS MIXING PLANTS 1949

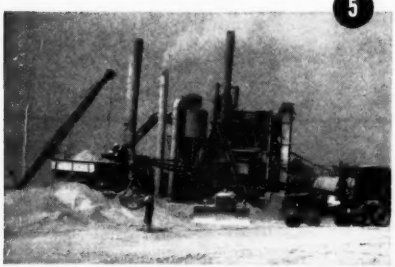
5 Cedarapids Model "E" Batch Type Bituminous Mixing Plant produced an average output of *700 to 800 tons per day* on an airport job that called for mixing 305,700 sq. yds. of flexible base and asphalt surface runways.

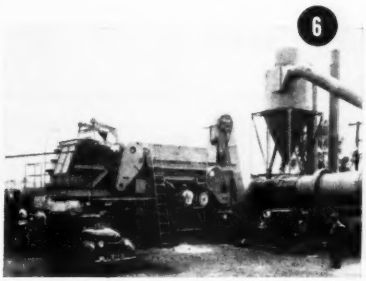
6 Model "FA" is the most portable Batch-Type Bituminous Mixing Plant in the Iowa line. Can be set up ready for operation in a few hours. This plant, operating in Ohio, produces *450 tons* of bituminous materials per day.

7 This Cedarapids 1000 lb. Model "A" Bituminous Mixing Plant produces a steady *200 to 250 tons per day.* Accurate batching, thorough mixing and simplicity of operation keep product quality high and costs low.

8 Cedarapids Patchmaster, a rugged, low-cost continuous-mix Bituminous Mixing Plant, produces *30 tons per hour and more* of uniform, thoroughly coated and mixed aggregate. This Patchmaster can be equipped with a 48" x 16' Cedarapids Drier and Dust Collector.







buy Cedarapids . . .

See Your Cedarapids Distributor For Full Details

IOWA MANUFACTURING COMPANY

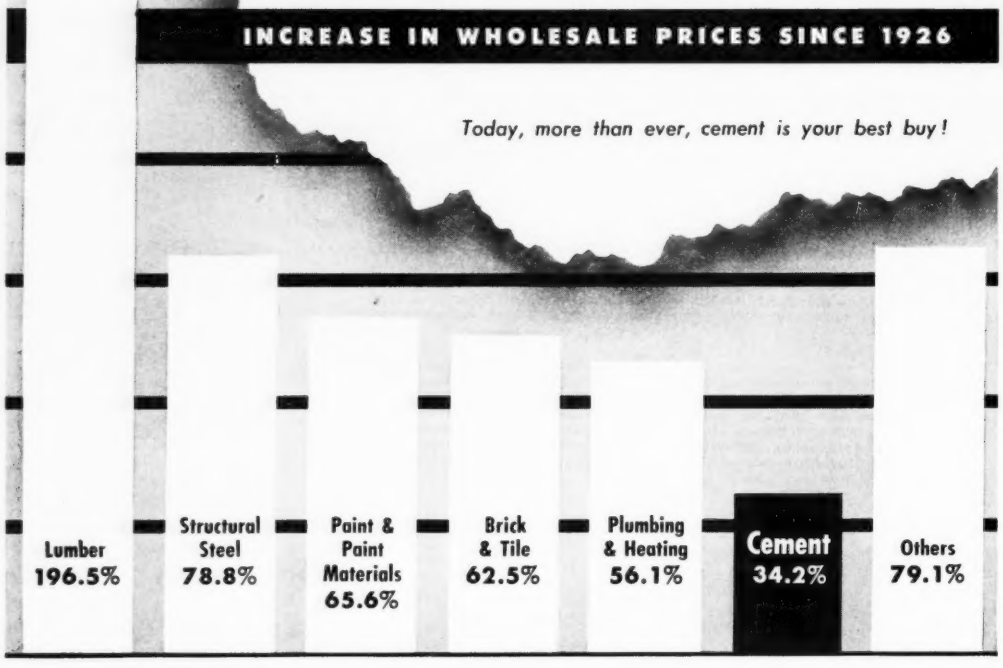
Cedar Rapids, Iowa, U. S. A.

Cement—best buy in building materials!

A glance at the chart tells the story. Since 1926 cement has had a smaller increase in wholesale price than *any other building material.*

These figures are from the Bureau of Labor Statistics as of February, 1949. They re-emphasize a point of primary importance to every man in the building trades:

Cement is CHEAP. Cement gives you MORE for your money!


INCREASE IN WHOLESALE PRICES SINCE 1926
Today, more than ever, cement is your best buy!
Lumber 196.5%
Structural Steel 78.8%
Paint & Paint Materials 65.6%
Brick & Tile 62.5%
Plumbing & Heating 56.1%
Cement 34.2%
Others 79.1%

Cumberland

PORTLAND CEMENT COMPANY

Chattanooga Bank Building • • Chattanooga 2, Tenn.

Cumberland Cements

Portland — High Early Strength — Air Entraining — Masonry

HOW a — LINK-BELT SPEEDER Will Boost Your PRODUCTION

Back of every Link-Belt Speeder design feature is a wealth of experience which says, "This principle assures efficient action and freedom from trouble. Hence—this principle protects the profits by avoiding excessive operating and upkeep expense".

Let the nearby Link-Belt Speeder distributor show you the rest of these distinctive Link-Belt Speeder "Profit Protectors".

FEATURES LIKE THESE GIVE THE LS-85 "SUPER" ¾ YARD SHOVEL-CRANE HIGH PRODUCTION AND LOW OPERATING COST!

- 30,000 pounds lifting capacity with 35' boom and 10' radius.
- Heavy duty lower and upper main frames —all welded construction.
- Efficient, simplified power train.
- Exceptional overall track length and machine width.
- Steering arrangement designed for high maneuverability.
- Ample power unit from the manufacturers standard production. Choice of three diesel engines.
- Two speed travel is standard.
- Efficient, dependable, heavy duty swing and travel mechanism.
- Independent rapid boom hoist with safety power lowering.
- Wide faced operating drums—ample cable capacity.
- Double band clutches.
- Large area drum brakes.
- Fully convertible to all attachments.
- Distributor service and repair parts facilities.

11,510

LINK-BELT SPEEDER

LINK-BELT SPEEDER CORPORATION, CEDAR RAPIDS, IOWA

Builders of the Most Complete Line of SHOVELS-CRANES-DRAGLINES

Adequacy of the Highway Construction Rate

by
J. S. Bright
Deputy Commissioner
Public Roads Administration
Washington, D. C.

HIGHWAY transportation is a cooperative enterprise in which the people, through government, furnish the roadbed, and private individuals furnish the rolling stock. Private enterprise has invested untold additional millions in facilities for distributing, replacing and servicing the rolling stock. This transportation team serves as a link between our isolated resources of mining, petroleum, forestry, agriculture, industry, the centers of commerce, our national defense system and in the development of our cultural educational and spiritual life.****

It is the purpose here to appraise the adequacy of the rate of highway production to meet the rolling stock needs. There are two aspects to the subject: Are we producing highways fast enough to sustain a transportation system to efficiently serve and promote the economy and welfare of the Nation; and are we producing highways fast enough for timely completion of current authorized programs?

(1) Adequacy of the Rate of Construction to Sustain an Efficient Highway Transportation System

It is evident to any motorist that many of our highways are now old, inadequate or worn out. Highways wear out just like a suit of clothes. There is continuous deterioration due to wear and tear of traffic and action of the elements. This deterioration is most noticeable in the road surfaces, but it is also taking place in the subgrade and structures.

Highways also become outgrown, just as clothes do when the wearer happens to be a growing boy. In a period when motor-vehicle traffic has been developing as rapidly as in the last 30 years, obsolescence becomes a greater factor on some roads than deterioration. Narrow pavements and hazardous shoulders are an outstanding example. Unfortunately, highway facilities cannot be junked or traded in on later models every few years as is done with motor vehicles.****

Deficiencies have been accumulating on our highways and streets since the depression when State and local expenditures for highway reconstruction and expansion were slashed to the bone. During that period, it was not possible to keep pace with deterioration. Expansion of highway capacities, in order to meet the ever-increasing demand placed upon them by the motor vehicle (improvements of such vehicles being actually stimulated by the depression) was out of the question. During the war, that situation could not be physically corrected because of scarcities of manpower and materials. It was, in fact, aggravated by the increase in axle loadings permitted to meet the war emergency, and by the less than normal highway maintenance program that was possible under the Nation's wide shortage of manpower, materials and equipment.

Obstacles in the way of rapid correction of highway deficiencies after "V-J Day" were reared by factors emerging from a Nation converting from a wartime to a peacetime economy. Programs had to be altered to meet the ever-changing condition of the construction market. Steel structures had to be partially deferred. Only the simplest type of highway work could be advanced.

A recent estimate published by the Brookings Institute indicates that the 1948 highway transportation bill was $30,000,000,000. About one-tenth, or three billion, went for highways. The other nine-tenths of the total went for automobiles, insurance premiums, gasoline, parking, lubrication, tires and all the other products provided by private industry. A better public understanding of the ratio between the cost of highways and the cost of highway transportation would perhaps disclose that what appears to be a saving by restricting highway expenditures is being lost through excessive vehicle operating costs resulting from an overly conservative highway program.

It should be remembered that current physical deficiencies are merely the visible symbols of continuous economic loss. The loss itself, compounded as deficiencies increase, is in terms of accidents, time delays, parking problems, wear and tear on motor vehicles and all the attendant burdens placed upon the general economy. The most common visible evidence of deficiencies is the congestion through which almost every motorist struggles during peak traffic hours or peak days. The average speed in downtown business districts often drops lower than 10 miles per hour. Maintenance expenditures alone on State, county and municipal highways rose from $333,000,000 in 1921 to $1,132,000,000 in 1948. We pay for our highways whether we have them or not.

Estimates of Highway Deficiencies and Program Needs:

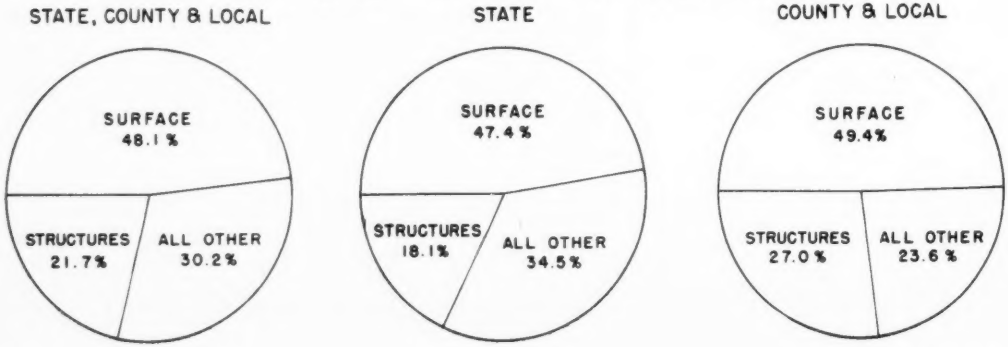
The Economic Report of the President, transmitted to the Congress in January, 1949, recognized current highway problems in the following words:

> **"Highway traffic has increased faster than total production, population growth, or highway capacity. An annual 3 per cent increase in output and transportation would require an annual expenditure of at least 4 billion dollars for maintenance, repair, and new construction of our road system. About one-third of this should be assigned to city streets and expressways, one-third to primary rural roads, and one-third to secondary and local roads. Expenditures in 1949, including maintenance and repair, are not expected to equal even half our annual long-run needs."**

Deducting the current annual maintenance expenditure from the $4,000,000,000 would mean an annual construction program of $2,900,000,000. It is double the $1,569,000,000 of all State, county, city and local highway construction work performed in 1948. Accumulated highway deficiencies by far exceed either of the above amounts.****

Surveys of State, county and city highway systems in 17 States disclose that 579,010 miles, or 49 per cent of the 1,172,785 miles of highways appraised, are deficient. The estimated cost of correcting these deficiencies over a 10-year period is $16,600,573,353. Within these amounts, 102,471 or 55 per cent of the State highway mileage was deficient and would cost $10,400,000,000 to correct; 447,359 miles or 49 per cent of the county and local mileage would need correction at an esti-

Below—Chart I—Highway needs as an entirety and by state and by county and local.



mated cost of $3,200,000,000; and 29,180 miles or 41 per cent of the city streets would need correction at an estimated cost of $3,000,000,000.****

State surveys of highways deficient on part of the remaining 2,081,215 miles of highways and streets in the country are being made in some of the States. If the pattern of highway deficiencies disclosed in the 17 States surveyed holds true in the remainder of the 48 States, the estimated cost of correcting all the highway deficiencies over a period of 10 years would be at least $47,000,000,000.****

At this point it may also be of value to the highway industry to have a general idea of the nature of the work that will be needed to correct highway deficiencies so that equipment production, acquisition and contractors' organizations and capacity can be geared or slanted to the work ahead. From the items of work listed in the reports of State-wide highway needs studies, it is disclosed that 48.1 per cent of the combined State, county and local needs are on the surface; 21.7 per cent, structures; and 30.2 per cent, all other items. The following is a further breakdown of the work for State and local highways. It is also illustrated in Chart I.

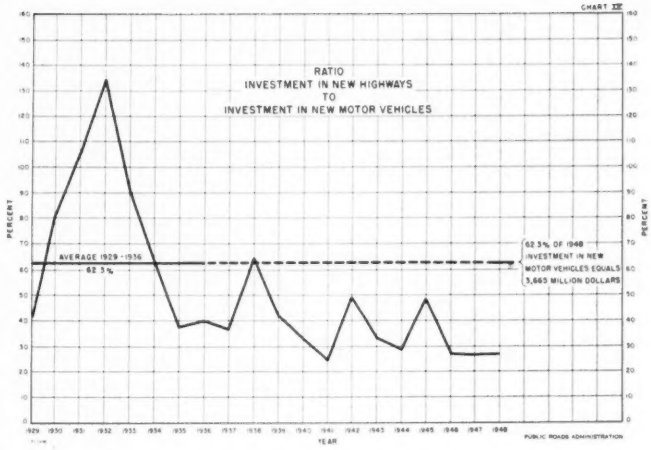
Classes of Roads	Surface Per Cent	Structures Per Cent	All Others Per Cent	Total Per Cent
State highways	47.4	18.1	34.5	100
County and local ..	49.4	27.0	23.6	100

State-wide highway needs surveys are not the only clarions calling attention to existing highway problems. Records of motor-vehicle registrations and of expanding highway use are self-explicit. Motor-vehicle registrations rose from 10,493,066 in 1921, to 41,151,326 in 1948; the latter figure includes 7,555,330 trucks.

Motor-vehicle travel expanded from 55 billion vehicle-miles in 1921, to 395 billion vehicle-miles in 1948. The frequency with which your car at higher modern speeds passes a truck on an obsolete 18-foot paved width may be reflected by the fact that in 1904 the ratio of trucks and busses to passenger cars was 1 to 78; by 1910 this ratio had become 1 to 45; in 1920, 1 to 7.3; in 1930, 1 to 6.5; in 1940, 1 to 5.9; and in 1948 it was a ratio of 1 truck and bus to 4.5 passenger cars.

The frequency with which overweight trucks are deteriorating pavements is also to be noted. From counts made in Illinois at loadometer stations during the period of investigation, the total yearly occurrence of tractor-semitrailer and truck-and-trailer types of combinations on roads at these locations was determined to have been 3,016,260 in 1945 and 3,361,285 in 1946. Of these totals 11.5 per cent, or 346,870 units, exceeded the 18,000-pound limit in 1945; and 15.5 per cent, or 521,000 units, exceeded the 18,000-pound limit in 1946. The overload occurrences were determined only for loadometer station locations and were not projected to an estimate of occurrences throughout the State.

It seems evident that the annual rate of construction has not kept pace with the expansion of ton-mile movement over the highways. It would be interesting to observe the extent of this lag in relation to ton-miles of traffic. Converting passenger and commercial vehicle-miles traveled into ton-miles and relating it to annual construction expenditures, it will be found that in 1948 only one-half as much highway construction was put in place as in 1936. (See Chart II.)



In 1936 this Nation expended 920 million dollars on the construction of highways. In the same year it is estimated that 518 billion ton-miles of vehicles moved over the Nation's roads. There was then being expended 1.8 mills of construction money for each gross ton of traffic moving one mile.

Last year 1,569 million 1948 dollars were expended for construction and an estimated 952 billion ton-miles of traffic moved on the highways. It amounted to 1.7 mills per ton-mile. But, the 1948 dollar bought less construction. In terms of 1936 dollars this was less than .9 of a mill. Therefore, in relation to the gross ton-miles of vehicle travel, only half as much construction was being performed in 1948 as in 1936.

Passenger vehicle movement and truck hauling within legal size and weight limits are, of course, essential in supporting agriculture, industry and our standards of living. Without transportation there would be little point in the farmer growing more than he could consume himself, and the factory, with its low-cost mass production techniques, must have millions of customers. It will be well to reflect on how the highways are used in the business of the day.****

These are but a few reflections of how highways are used in business. How did highway production keep up with the business trend? (Chart III). Some indication may be obtained by comparison with the gross national product. It fluctuated during 1929-1936 but, using the average as a base, highway construction expenditures were 1.4 percent of the gross national product. In 1938 they were 1.1 percent; in 1940 they were .9 of 1 percent; in 1942; four-tenths of 1 percent; in 1944 they were at a low of .2 of 1 percent; but by 1948 they were back up to .6 of 1 percent.

(Continued on page 34)

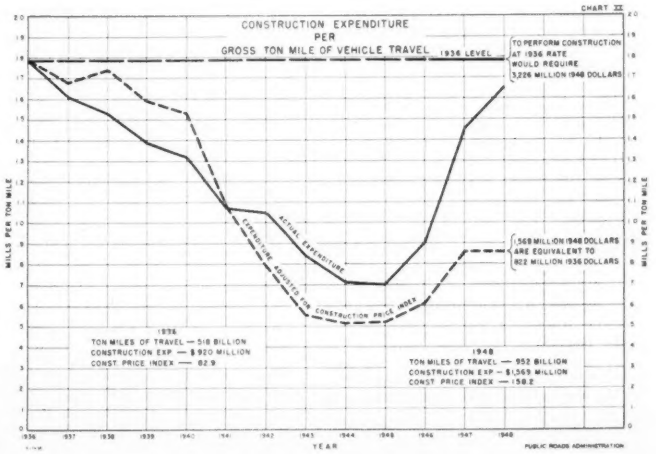
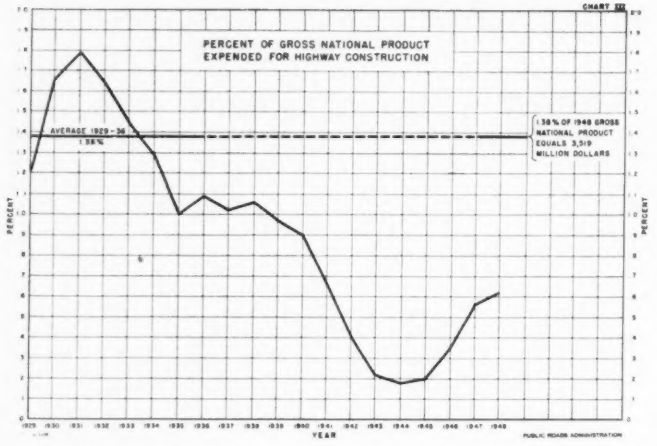


CHART III
CONSTRUCTION EXPENDITURE
PER
GROSS TON MILE OF VEHICLE TRAVEL 1936 LEVEL
TO PERFORM CONSTRUCTION AT 1936 RATE WOULD REQUIRE 3,226 MILLION 1948 DOLLARS
MILLS PER TON MILE
EXPENDITURE ADJUSTED FOR CONSTRUCTION PRICE INDEX
ACTUAL EXPENDITURE
1569 MILLION 1948 DOLLARS ARE EQUIVALENT TO 822 MILLION 1936 DOLLARS
1936
TON MILES OF TRAVEL — 518 BILLION
CONSTRUCTION EXP — $920 MILLION
CONST. PRICE INDEX — 82.9
1948
TON MILES OF TRAVEL — 952 BILLION
CONSTRUCTION EXP — $1,569 MILLION
CONST. PRICE INDEX — 150.2
YEAR
PUBLIC ROADS ADMINISTRATION

HIGHWAY CONSTRUCTION RATE (Continued)



In 1948 the gross national product was $255,000,000,000, and highway construction expenditures were $1,569,000,000. The 1948 ratio of .6 of 1 percent again discloses that the rate of highway production would have to be doubled to approach the 1929-1936 highway construction rate of 1.4 percent of the gross national product.

As a last analysis a comparison has been made of the annual construction expenditure with the expenditure of the transportation partner in the purchase of new rolling stock (Chart IV). In the period 1926-1936 highway construction expenditures averaged 62 percent of expenditures for new motor-vehicles. This ratio fluctuated downward until the period 1946-1948 when the highway construction expenditures amounted to 27 percent of expenditures for new motor-vehicle purchases. Here again is shown the fact that highway construction is lagging at least 50 percent behind the rate of new rolling stock expansion.****

Very shortly, the Public Works committees of the Congress will have before them a detailed report on the substandard conditions of the Interstate Highways and other major routes which are essential to national security and national defense. This report is based upon the detailed studies by the state highway departments. The Secretary of Defense and the National Security Resources Board have cooperated fully. The report was directed by the Congress in the 1948 Highway Act following the precedent of 1941. The report at that time on "Highways for the National Defense" resulted in special appropriations approximating 350 million dollars for the major routes and defense access roads.

The final figures of cost for bringing the Interstate Highway System and other necessary roads to a state of reasonable adequacy for the national defense, as of the present, will total in excess of $10,000,000,000.

(2) Adequacy of the Rate of Construction to Meet Authorized Programs

There remains a review of the progress being made in the production of highways for the timely completion of current authorized programs.

Notwithstanding the delays and problems of the postwar years, there is now much promise for the future in the road contracting field. The Federal-aid Highway Act of 1944 greatly broadens the base for contract construction between the wide extremes of the simplest, least expensive types for low traffic volume farm-to-market road, to the urban arterial type for the daily use of many thousands of vehicles in the metropolitan area. The three systems — Federal-aid primary, Federal-aid secondary and urban arterial, as now definitely selected, total 611,226 miles.

The postwar program set in motion by the Congress in October of 1945, while apparently slow in getting under way, now extends to more than 70,000 miles in all stages, of which 37,529 miles of all classes and types have been completed.

Measured in terms of dollar value of construction put in place, the Federal-State cooperative highway construction has accelerated steadily since the end of the war period. From approximately $90,000,000 total cost in the calendar year 1945, advances to $329,000,000 in 1946, $580,000,000 in 1947, and $768,000,000 in 1948 have been recorded.

It appears likely that during the present calendar year, Federal-aid construction put in place may reach values of $50 million dollars in total cost and 440 million dollars in Federal funds. This is about equal to the annual rate of Federal fund authorizations carried in the Federal-aid Highway Act of 1948.****

The shortage of highway construction equipment seems to have largely disappeared. For the past year the supply has been steadily improving. Shortages which existed in the patrol grader, crawler tractor and power shovel fields are decreasing to the extent of now being on a close to immediate delivery basis.****

Bid Price Trend

It is also apparent from work let to contract during the first quarter of the calendar year 1949 that a decided break has occurred in the upward price trend.

Out of approximately $118,000,000 of contract awards, there has been a decline of 2.4 percent in the composite mile index from the previous quarter. Structures which had been the principal contributing element in past upward trends show a 5.1-percent decline. It is comprised of the following three elements which have individually declined as follows: Structural steel, 1.2 percent; reinforcing steel, 2.6 percent; structural concrete, 7.3 percent.

Common excavation remains the same as in the last quarter of 1948. The last quarter of 1948, however, showed a drop of 4.5 percent from the third quarter. Concrete pavement has dropped 2.3 percent since the beginning of this year.

Contractors' Capacity

There have been differences of opinion over the capacity of the contracting industry to handle the postwar Federal-aid construction program.

Field engineers of the Public Roads Administration in recent reports indicate, in general, that the situation is quite satisfactory. Increased competitive bidding is pronounced. Twenty-four bids were received on one project in the first quarter of 1949. No less than 15 bids have been received on several projects in various parts of the country. On this sample the aggregate of bids was 19 percent less than the engineers' estimates but for the entire Federal-aid program for the calendar year 1948, the total low bids were only 1.8 percent below the engineers' estimate; however, for the first quarter of 1949 the low bids were 6.5 percent below the engineers' estimate which would indicate that lower bids are being received during 1949.

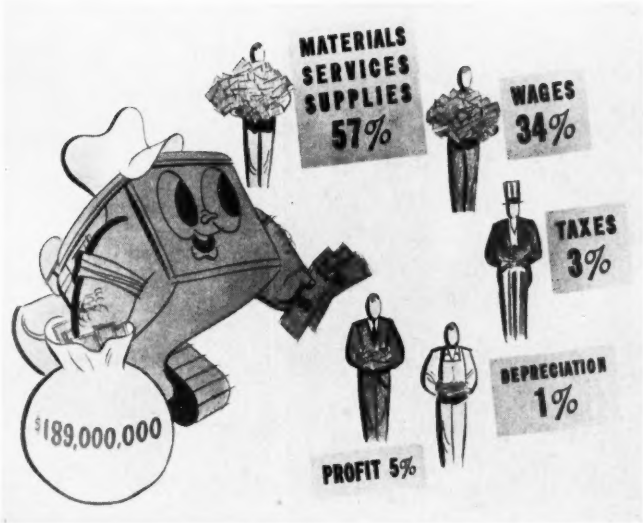
Engineering

The lack of sufficient engineers to properly carry on the survey, design and construction has been a serious stumbling block to the successful execution of the postwar Federal-aid program in many States. The causes are basically the same wherever they occur: loss of personnel during the war period, inability to recruit and hold the necessary additional engineers because of relatively low salaries, insecurity of employment, poor prospects for advancement, inadequate subsistence allowances, undesirable working locations, frequent moves from place to place and seasonal nature of work.****

Homes "Turning Around"

The typical American home is gradually "turning in its tracks," according to the National Association of Home Builders.

As a result of increased emphasis by Home Builders and designers on better living for all income groups, the contemporary-styled home is being oriented toward the rear or garden section of the lot, according to Carl G. Lans, technical director of the Association. He based his statements on observations made during a series of coast-to-coast home building inspection trips.

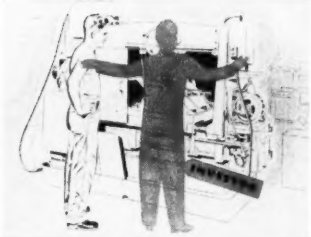


Above—Suppliers got most of the dollars, which in turn helped to pay wages of their employes. At Caterpillar, 32.7 per cent of the dollars went for wages.

An Important Story — and Another Way of Telling It

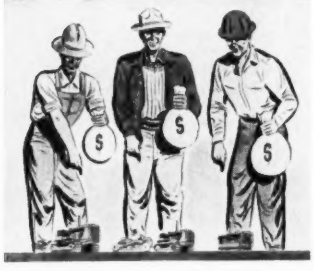
By
Fred R. Jolly

Assistant Director of Community Relations
Caterpillar Tractor Co., Peoria, Illinois



Above—One of the most important individuals in the business is an invisible man—the investor. He and about 20,000 like him are the people who made this business and the 20,000 jobs possible.

Below — Customers are the real bosses, not those who manage the plant but those who keep it operating and whose money pays the wages and who actually decide what machines and how many are to be built.



IF you are in business you need friends—either to buy your wares or to consider you a worthwhile asset in the community. Long shelves of books have been written on how friends are made, and the way companies do it are as varied as the products of their plants.

Every company approaches its problems in a different way since no set of rules can fit all needs. It may be, however, that the experience of Caterpillar Tractor Co. in Peoria, Ill., in the field of plant visits will serve others who want to set up similar programs.

Frankly, those experiences are offered here with that hope in mind—that other companies will be encouraged to establish such programs. For if others develop friends for industry in their neighborhoods and we do it in ours, maybe we will get a lot of folks to understand that the well-being of this nation is tied inseparably with the well-being of its businesses. Both can enjoy prosperity together, neither alone.

There has been much talk of late about industry's open house. And good talk it is, for if there is any story which needs telling it is the one "what makes business tick?" The point is, are we doing enough open house work? If open house is a good idea once in a while, why isn't it even better to conduct open house on a continuing basis?

That's nothing new, of course. Many companies have been taking folks through their plants for years. They've been telling folks about the tremendous quantities of nuts and bolts they use, the hundreds of acres over which their plants spread, the millions of gallons of water, the miles of inter-plant railroad they have and, worst of all, they've been pouring all this information into the eager visitor's ear at a rate of 5000 words to the mile while maintaining a double-time pace through the plant.

Even this "howdy-whis-s-s-ht-thanks-for-coming-in" attitude has done a certain amount of good and even made a few friends for industry. If it hadn't, many plant managers would have forgotten it long ago. But think what progress can be made by industry if genuine, thoughtful attention is given to the visitor. Surely few people will argue that industry needs friends. And some of those who have thought the problem through maintain that there isn't any better way to make friends than to get them to know you. The best way to do that, they say, is to get acquainted with them one at a time. The next best way is two at a time and—you take it from there.

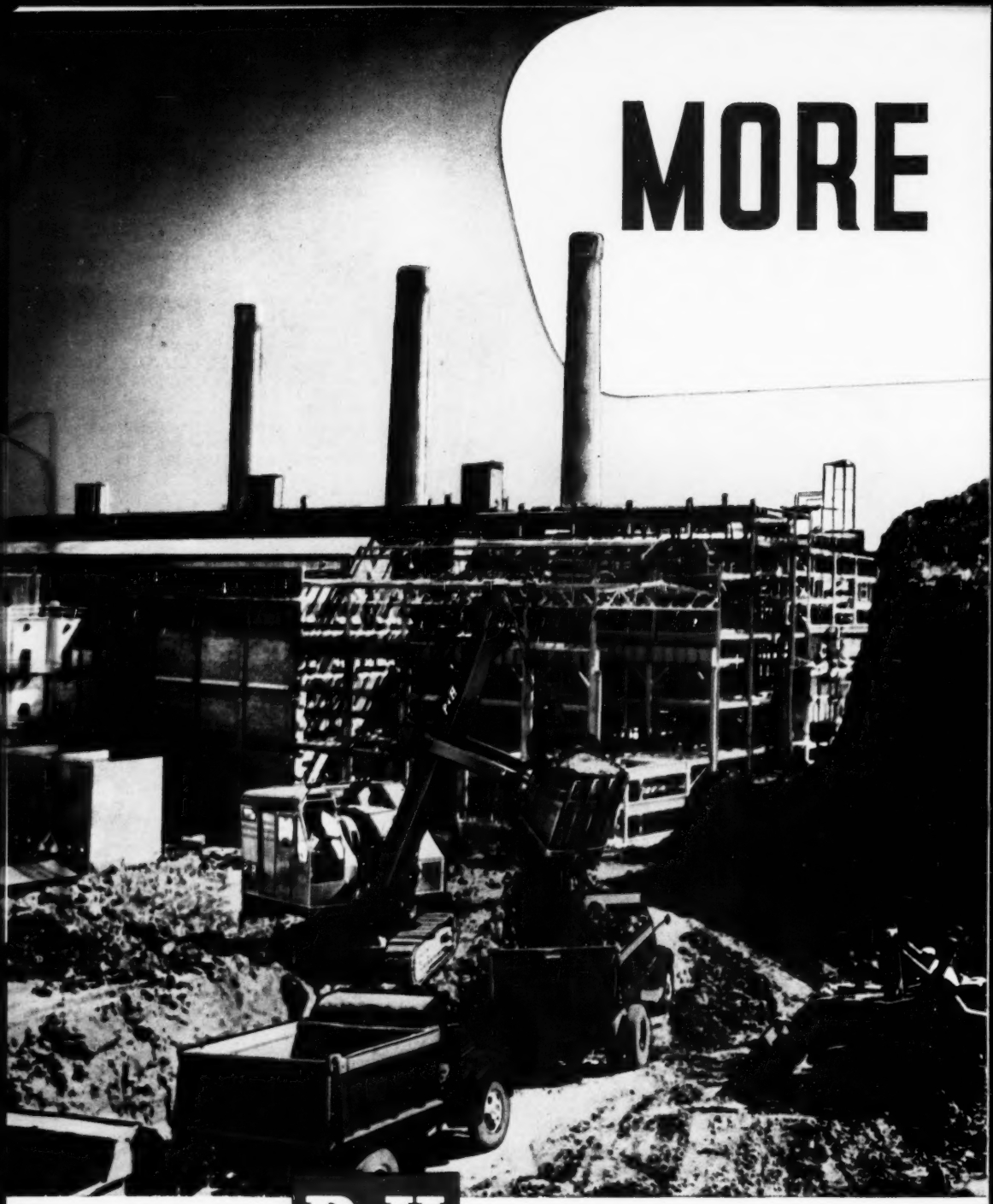
This much we may as well admit. Business and industry needs friends to counteract the sly, slow poison which Communism's anti-free enterprisers are injecting into our national blood-stream. The privately-owned, competitive way of doing business has brought this country to greatness, by making available more things for more people. You know it. I know it. But many folks only know what they are told—and they're being told that state control will do even more for them than private ownership. So, unless we want statism to come into flower, we must do something.

Caterpillar's Plant Escort Service, a far better name than guide service in our opinion, is all that its name implies. It is a service department, designed to provide plant trips for customers, prospects, and visitors to other departments in the Company—and to employees, their families and neighbors.

The section is set up on a permanent basis, a supervisor of long and sound experience, having been selected to head it. Plant Escorts are all young men, carefully picked for the jobs. Because the Plant Escort Service offers an unequalled opportunity to learn, only the most promising young men are accepted. In addition to learning plant, products and customers, they learn how to get along with people, a priceless possession any time. Time has already proved the wisdom of this careful selection. Young men who started with the Service have already been requested for jobs of even more responsibility.

Escorts are carefully trained, not alone in the technical aspects of plant and products, but in the every-day points of interest. They know and use such information as the statistics mentioned earlier. But they are given fundamental training in the economics of industry and when

(Continued on page 64)



LOOK TO **P&H**

FOR ADDED VALUES

(Above) A P&H Model 655 (1½ yard). Important features include all-welded construction of rolled alloy steels, low pressure hydraulic control — true tractor type crawler — and many others you can't get in other machines, or, if available, cost you extra.

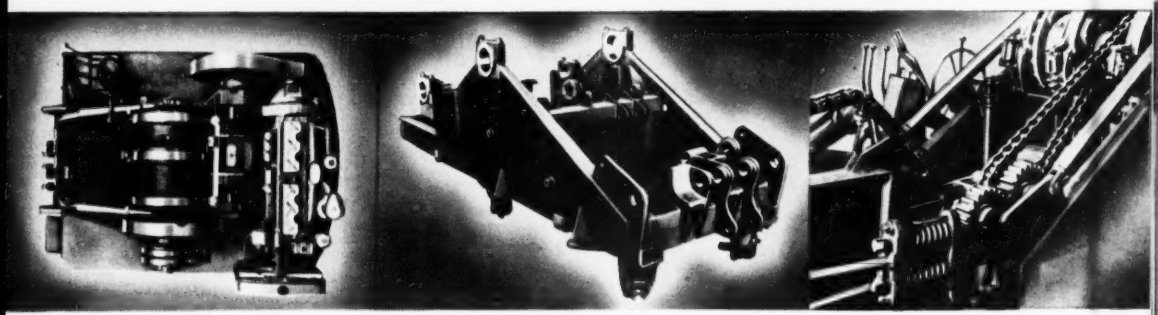
DIGGING POWER

per pound of weight

another P&H added value

Sit at the controls of a P&H and you'll know what we mean. It's *designed* — from crawlers to boom point — to put more *dig* at the tooth point! Deadweight's out! Live weight does it — makes the difference in faster, easier digging. And that means lower costs on any job.

Here are some of the ways you gain maximum capacity in relation to total machine weight:



1. YOU SWING LESS DEADWEIGHT. Machinery units on upper deck are placed far back of center to counterbalance digging end. This trims off hundreds of pounds of clumsy ballast — peps up the swing — reduces strain.

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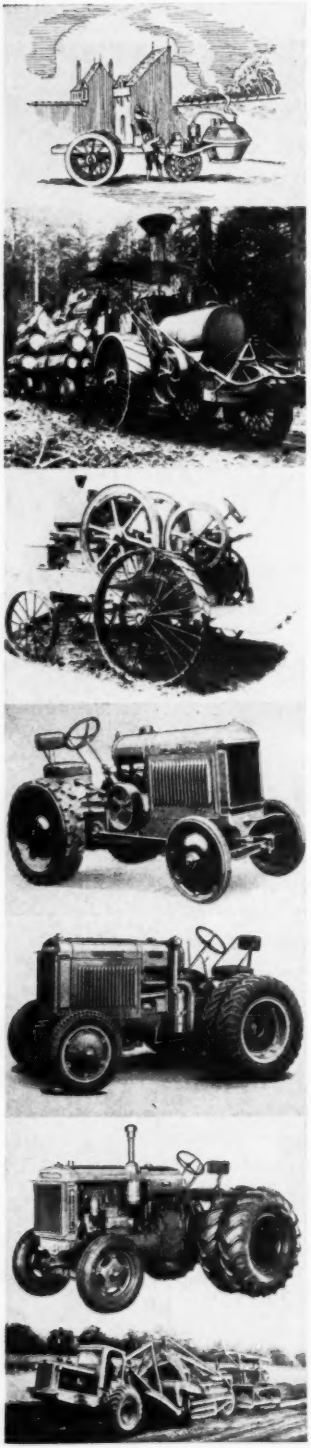
Evolution of the Industrial Tractor

By
H. T. Reishus,

General Manager
Industrial Power Division
International Harvester
Company



Left—Development of the tractor. The sketch at the top of the column is Cugnot's artillery tractor built in France in 1769. Next is the Best industrial steam tractor, 1894; Third is the wide-wheel steam tractor built in 1898 by Holt Manufacturing Co. International Model 20 was introduced in 1924, shown in the fourth view; The I-30 International was introduced in 1932, showing the transition from solid to high pressure pneumatic tires. The ID-40 in fifth illustration is the first industrial diesel-powered wheel tractor. At the bottom is the Super C Tournapull.

"TRENDS in Industrial Tractors" is a subject close to progressive living. This is because industrial wheel and crawler tractors, combined with suitable allied equipment, keep earthmoving costs down for new homes, highways, airports, buildings, mines, dams, flood control, and oil field development. Their versatile power cuts costs and eliminates low-paid but expensive drudgery in materials-handling. They mechanize profitable selective logging for pulpwood, plywood and lumber. During the war the tractors, as "bulldozers" pioneered the way to victory.

It is not my intention to discuss tractor trends in a highly technical manner, but rather to leave the long, wearisome details to the Research, Development and Engineering Departments of the tractor manufacturers who have survived the rigorous pace of progress. Instead, you will be given an overall picture of what has been accomplished, and a general idea of what may come next. To present this picture, I will illustrate and discuss briefly:

(1) Industrial Wheel Tractor Progress;

(2) Evolution of the Crawler Tractor;

(3) Allied Equipment, or Working Tools;

(4) Trends in New Models, . . . and

(5) Users' Requirements for Future Development.

(1) Industrial Wheel Tractor Progress: The industrial wheel tractor class ranges from small shop tractors to big rubber-tired earthmovers. Some twenty manufacturers are currently in the business. The smaller tractors are mainly modifications of basic farm tractors or short wheelbase combinations of a gasoline engine with truck-type transmission and rear axle assembly. It is in the big earthmovers where the most development has taken place recently, with considerable assistance from rubber tire and diesel engine manufacturers.

In fact, the industrial tractor industry depends on many outside manufacturers for its progress. While rubber companies have played a prominent part in recent wheel tractor trends, there are numerous material and accessory suppliers who have contributed their share. The tractor manufacturers depend on the fuel and oil companies to furnish products which will keep their customers happy. That's why a trend toward more lead in gasoline and more sulphur in diesel fuel alarms most industrial engine builders.

Modern tractors cannot be produced in quantity at satisfactory cost without a large number of expensive machine tools somewhere in the line between the raw materials and the finished products. This is why the cost of introducing a completely new tractor can run into millions of dollars. The machine tool designers and makers, the stockholders who provide capital for the tools, and the hundreds of workers who operate them, all deserve their share of credit for refinements in and quantity production of each tractor design.

Also as part of the team are the railroads, truckers, and the manufacturers' dealers or distributors who move the tractors from the factory to the users. A peculiarity of the industrial wheel tractor business is that many of its co-operating manufacturers and services are also its user-customers.

Users are responsible for much of the progress in tractor design. They kick if things don't work right or if parts fail too soon. Sometimes they make applications that lead to new ideas in design. Outstanding help in the solution of tractor users' mechanization problems has come from allied equipment manufacturers who furnish the tools for doing the work and for which tractors must have adequate mounting and power take-off provisions.

The industrial tractor industry is indebted to pioneers of past generations for contributing basic ideas. The first crude ancestors of the tractor began to appear shortly after the invention of the steam engine by James Watt in 1765. Internal combustion engine development did not start until more than 100 years later when N. A. Otto brought out a 4-cycle gas engine in 1876, which in turn preceded Rudolf Diesel's success by 22 years. The modern tractor industry was started about 1880 by steam tractor users who mounted Otto cycle engines in the steam tractor chassis.

By 1906, when International Harvester entered the tractor field, Hart-Parr, Huber, Best, Kinnard-Haines, Lauson, and a number of others were already making a few gasoline tractors. The tractors were clumsy affairs, all intended mainly for agricultural drawbar work. A few found their way into road maintenance, pulling drags, wagons and graders. By 1912 International had started making two sizes of road rollers.

As the number of tractors and automobiles increased, gasoline became much higher in price per gallon than kerosene. This resulted in tractor engines being modified to burn kerosene after warming up on gasoline. Kerosene persisted as the

dominant tractor fuel until the "30's", when the trend in home heating and the development of the automotive diesel brought distillate and fuel oil into the picture in place of kerosene.

Conventional or Otto cycle engines lose power, idle poorly and dilute the lubricating oil when used with fuels less volatile than gasoline. Diesel engines, on the other hand, not only give outstanding performance on fuel oil, but also burn much less fuel than conventional engines in doing the same amount of work. As a result, diesel engines have already taken over the big tractor field, and are encroaching on the smaller tractor class now powered mainly by high compression straight gasoline engines.

The first tractor on record was Cugnot's artillery tractor, built in France in 1769. The single front wheel was used both for propulsion and steering. During its first public demonstration the enthusiastic inventor, with several brave men aboard, attempted a turn with the disastrous result that the unbalanced machine fell on its side and Cugnot landed in jail.

Steam traction engine development went forward slowly over the next 100 years. By 1890 the U. S. production was only 2500 to 300 steam tractors per year. The industrial steam monster shown was made in 1894 by the Best Manufacturing Co. for West Coast logging. Although a vast improvement over animal power, its large turning radius, top-heavy construction and poor tractive ability made it successful only on fairly straight and smooth roads.

A wide-wheel steam tractor was built in 1898 by the Holt Manufacturing Co. of Stockton, Calif., in an endeavor to get traction and flotation on soft land. Drawbacks of this machine led to the commercial development of the crawler tractor.

The gasoline-engine powered tractor is typical of the pioneering done in the 1890's for the modern tractor industry. It consisted mainly of a stationary type single cylinder gasoline engine mounted with a friction drive to the rear wheels.

The steam traction engine influence lay heavy over the wheel tractor industry during the early 1900's. The 1906 model is the first International gasoline traction engine. The 20 b. h. p. size weighed 13,500 pounds and moved at 2 m.p.h. The 1911 Mogul weighed 21,700 pounds and had an opposed twin cylinder kerosene engine of about 45 b.h.p. at 375 r.p.m.; one gear forward and friction drive reverse. Even the 1912 Titan road roller resembled the steam rollers then in common use. This machine, powered by a

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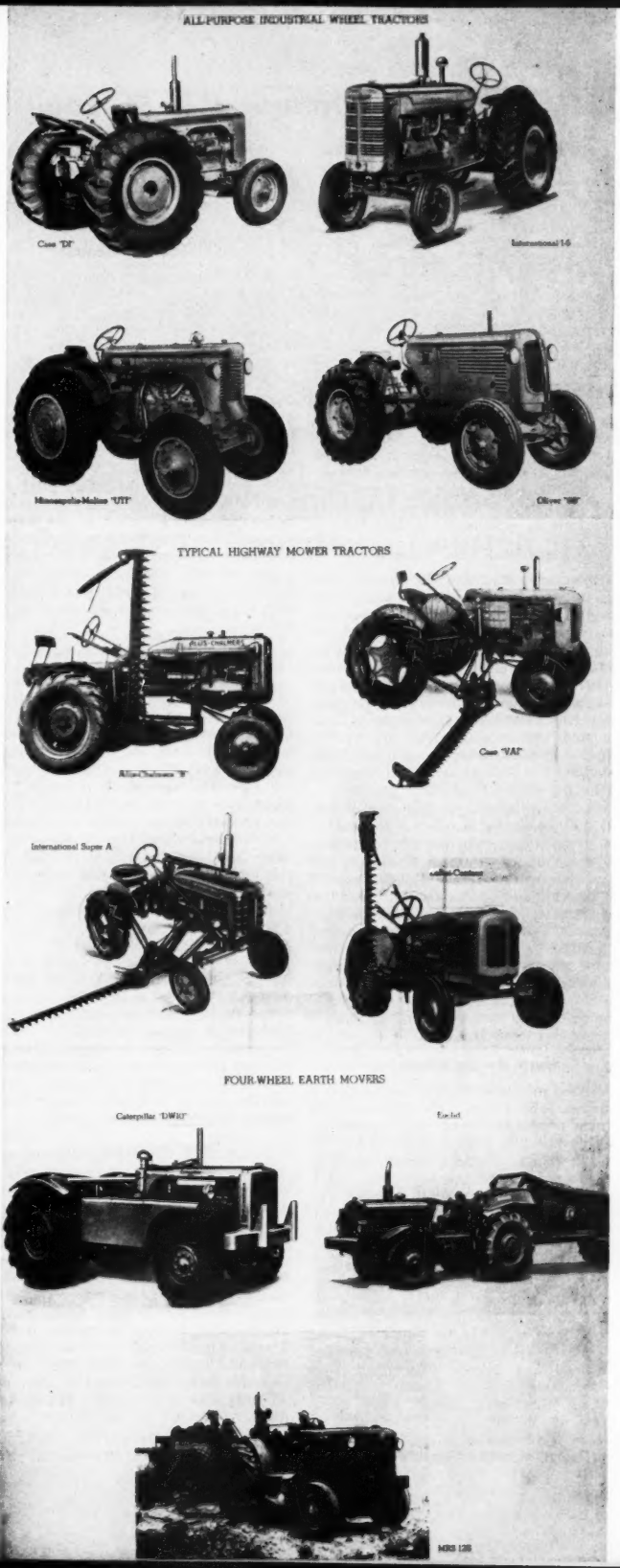

Right — Top — All Purpose Industrial Wheel Tractors, representative of the middle-size current models made by Case, International, Minneapolis-Moline and Oliver. Middle—Tractors in the small industrial and highway mower class made in the Midwest area. They include the Allis-Chalmers B, Case VAI, International Super A and the LeRoi Centaur. At the bottom are models of current tractors in the 4-wheel rubber-tired earthmover class made by Caterpillar, Euclid and M-R-S.

Nashville, Chattanooga & St. Louis Program Described

The year 1948 was a busy one for the Construction Department of the Nashville, Chattanooga & St. Louis Railway and plenty more work is anticipated in 1949.

In early 1948 an industrial site development called "Southland Industrial Center" in Atlanta, Georgia, was placed under construction. This work included the building of two industrial lead railroad tracks and the levelling of two of the proposed sites having an area of approximately 15 acres.

Grading and drainage of one of the lead tracks was done under contract by the MacDougald Construction Co. of Atlanta, Ga. This contract involved approximately 3,000 cubic yards of solid rock, 30,000 cubic yards common excavation, 25,000 cubic yards of borrow and 760 lineal feet of culvert pipe ranging in size from 24 to 72 inches in diameter.

Industrial Sites Cleared

Simultaneously, the Railway's own grading forces began the clearing and levelling work on the industrial sites and the other lead track. Their portion of the work included about 140 acres of clearing, 8,000 cubic yards solid rock excavation, 115,000 cubic yards common excavation and several lines of culvert pipe, including 102 lineal feet of 80 by 84 inch concrete culvert pipe. This project, including the necessary track work, was completed in July at a cost of over 870,000.

There was also begun last year an extensive relocation project on the Atlanta division near Cartersville, Ga. The reservoir of the Allatoona Dam, now under construction by the Mobile District of the Corps of Engineers, will flood the existing Railway in three different locations. The Management of the Nashville, Chattanooga & St. Louis Railway decided that to construct an entirely new line within the limits of the reservoir was more economical than to make the existing track safe for train operations under reservoir conditions.

Many Curves Eliminated

Although this relocation project lies in mountainous territory, the alignment and grade of the relocation will be modern with respect to present day railway location. The maximum grade will be 0.7% compensated, and the maximum curve two degrees. The saving in distance will be 1.6 miles and in curvature 723 degrees. Twenty-two separate curves will be eliminated.

This section of track is the heaviest single project undertaken by the Nashville, Chattanooga & St. Louis in recent years. In the four miles of relocation there was 150,000 cubic yards of rock excavation, 1,835,000 cubic yards of common and borrow excavation, 100,000 cubic yards of riprap and rock fill, a three-span bridge, 2,800 lineal feet of culvert pipe ranging from 24 to 84 inches in diameter and several small structures, such as a concrete retaining wall, a concrete box culvert extension, catch basins, and so forth. There were also several county and private road relocations made necessary by the changing of the railroad.

Allatoona Creek Bridge

The three-span bridge across Allatoona Creek, a tributary of the Etowah River, which is being dammed, is a through plate girder structure, each span 115 feet in length. The two piers are 90 feet high, resting on bedrock, and have a "dumbbell" section in the shaft to save concrete. The abutments are "bank type," each resting on 34 steel "H" piles driven through the compacted earth fill to bedrock. The bridge was built on dry land, and a channel change of the creek made to divert it through the bridge after the construction of the piers was completed. A through girder design of the superstructure was used to allow the greatest freeboard between the high water level of the reservoir and the low steel on the bridge, and still maintain the economical design on the long approach embankments.

Embankments Up to 80 Feet

Heights of embankments range up to 80 feet, and are so constructed to have an eight foot wide berm at 25 and 50 feet from subgrade. The side slopes are one and one-half to one up to 50 feet from subgrade and two to one for higher, except on fills exposed to the reservoir, where the slopes were determined from the proposed water stages of the pool. The reservoir embankments will have a three foot thick blanket of dumped riprap up to the 50 year flood expectancy level. All riprap and rock fill was obtained from the roadway section cuts. The depth of cuts ranges up to 90 feet, with side slopes of one and one-half to one in earth and from one-fourth to one to one in the rock, depending on the degree of weathering of the rock.

The Railway plans to stabilize the top four feet of the new roadbed by mixing 20 percent of sand to a desirable clay soil and rolling to maximum compaction. In addition to this stabilization, there will be placed a 6-inch layer of subballast before track work is begun.

Oman Holds Contract

Oman Construction Co. of Nashville, Tenn., were the successful bidders on this work and commenced last July. Their grading equipment consisted of 10 scrapers, ing equipment consisted of 10 scrapers, including five of the 25 cubic yard capacity drawn by Allis-Chalmers HD 19 tractors, six Caterpillars DW 10, two Caterpillar elevating graders, seven bottom dump Euclids, five sheeps-foot rollers drawn by rubber tired tractors and several bulldozers and pushers. The rock was moved both by the 25 yard scrapers and an 80-D Northwest shovel and four rear dump Euclids.

By working a day and night shift, the contractor moved over 400,000 cubic yards of earth excavation in one month. At present the contract is approximately 80 percent complete.

The bridge superstructure will be fabricated and erected by the Virginia Bridge Co. of Roanoke, Va. Track work and removal of existing tracks will be done by the Nashville, Chattanooga & St. Louis Construction sub-department. The schedule called for the "cut-in" of the new line on May 20 and to completely remove the existing facilities by August 5.

In March, 1948, there occurred a slide in an earth and rock cut on the Chattanooga Division about 60 miles south of Nashville, which nearly blocked train operations. To remedy this situation it was necessary to remove about 50,000 cubic yards of earth excavation. This work was done by W. L. Hailey, general contractor of Nashville, Tenn., and by the Railway company's grading forces.

Beginning last June, the Nashville, Chattanooga & St. Louis started a "ditching and banking" program to improve the drainage of the existing roadbed. A nine mile section between Nashville and Chattanooga was completed and two of the included photographs showing the "Before and After" of a section of this track illustrate what an improvement this ditching and banking program was to the drainage conditions and to the general appearance of the Railway.

This grading gang consisted of a work train handling three ¾-cubic yard shovels on flat cars, each shovel loading into two 20-cubic yard air dump cars coupled on either side of the flat car. The shovels loaded the air dump cars from the banks of the cuts being ditched and the work train pulled them to the fill which needed banking. Very good production with this outfit was realized, sometimes the round trip requiring as little as 15 minutes.

Bulldozers Operated

Bulldozers were used to keep the material within the reach of the shovels, and to otherwise support the operation. When the work train had completed its mission, a patrol grader was used to further dress the banks, except in rock cuts. An extra gang was used with this grading outfit to keep the track clear and to do other necessary work, such as the clearing of timber, setting back fences, and so forth.

Where possible ditching and banking was done with the Railway's off-track equipment, consisting of five TD-9 tractors with 3-cubic yard scrapers, three TD-14 tractors with 6-cubic yard scrapers, four TD-18 tractors with 10 cubic yard scrapers, three TD-9 dozer shovels and three ¾-cubic yard shovels with dump trucks. If the situation facilitates the use of this off-track equipment, ditching and banking can be done economically.

The ditching and banking of about 16 miles of track on the entire system was completed last year at a cost of over $120,000 and there is scheduled for 1949 over 25 additional miles at a cost of $126,000.

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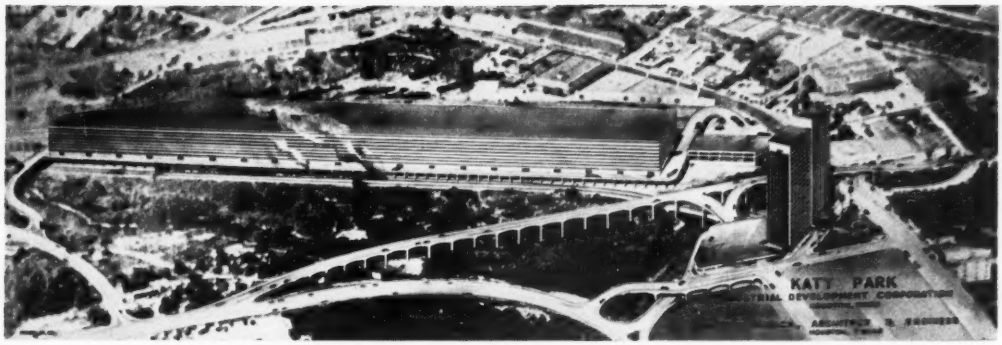

Above—Sketch showing 10-story warehouse and 25-story office building proposed as part of $50,000,000 Houston industrial development.

Multi-Million Dollar Industrial Development Proposed on Katy Railroad Property in Downtown Houston

J. B. SALMON, JR., president of the Katy Park Industrial Development Corporation late last month released sketches and building details for a huge multi-million dollar industrial building project which will occupy the 23-acre site of the Missouri-Kansas-Texas Railroad's present terminal facilities in downtown Houston, Tex.

Details of the great building project came simultaneously with an announcement by Raymond J. Morfa, chairman of the board of the Katy Lines, that an agreement had been entered into for the sale of the Katy's downtown freight and passenger terminal properties to the Katy Park Industrial Development Corporation. The Katy freight yards will ultimately be moved to the city limits at Eureka to make way for the gigantic warehouse, Mr. Morfa said.

"This fifty-million dollar investment in Houston's future as an industrial city will bring to this community the greatest single industrial building and service center in the country," Mr. Salmon stated. The drawings revealed an immense rail terminal comprising the world's largest multiple-story warehouse and a 25-story office building and other facilities, all embodying the most advanced ideas in architectural design. The project was designed to solve a nation wide problem of finding convenient warehouse space in congested business districts.

The warehouse will be 10-stories high and will have the equivalent of three ground floors. It will be nearly 2000 feet long and 200 feet wide with a usuable floor area of well over 3,000,000 square feet. Sketches show the mammoth warehouse occupying the site of the present Katy freight yard just northwest of the Main street viaduct. Where the Katy passenger station now stands was shown a projected 25-story office building capped by a slim tower reaching up forty stories above ground level to make this erection the tallest structure in Texas.

Katy Park Corporation, which is handling the project is in no way affiliated with the Missouri-Kansas-Texas Railroad Co. It is a subsidiary of the National Industries Corp., of Dallas, which has built a number of conspicuously successful industrial projects in Dallas in recent years. Joe B. Salmon, Jr., is president of both corporations. Mr. Salmon stated that several of the largest insurance companies of the country will participate in the permanent financing of this project.

The Katy Park corporation has established headquarters in the First National Bank building, Houston. Tom C. Mabray, executive vice president, is in charge of local arrangements, and it was understood that leasing commitments for space in the great warehouse are already being made. Other officers of the corporation are Henry Brooks Pixley, vice president in charge of construction and C. M. Hudspeth, secretary and treasurer.

Architects and engineers for the project are the firm of Wyatt C. Hedrick, designers of the already famous Shamrock Hotel project opened March 17, and of the great Merchandise Mart, in Dallas. O'Rourke Construction Co. of Houston and Dallas, builders of the Continental Oil Co. building, Houston, and contractors of many of Texas' greatest construction jobs, has been awarded the building contract.

Because of the magnitude of the project, Mr. Salmon declared, no definite date can be set for breaking ground on the buildings, but that work will be progressed with all possible speed. "We are hopeful that the entire development can be completed within four years," he said.

One of the most interesting aspects of the project as revealed in the architect's drawings was the novel layout of streets and arterial highway entrances and bypasses contemplated in the plans. At present the Katy has two main lines serving its industrial property at two different levels. It is proposed that the railroad's main line which now passes through its yard and enters the present Katy passenger station under Main street viaduct, will continue to serve the new Katy station in the first ground floor of the new office building. Access to trains will be by escalator from the second ground floor which will contain the concourse, ticket office, waiting rooms and many shops and offices. Access to this floor will be by gentle ramps from the third ground floor level. The latter will be level with Main street viaduct and the M&M building. Here will be the main entrances to the building.

Although pedestrian traffic is expected under the plan to use the Main street viaduct entrance to the great office building, a second main entrance is provided for the rear of the building by the projected extension of Travis street by viaduct across Buffalo Bayou to intersect with the new superhighway. Skirting the north side of the building, the Travis street extension is planned to relieve congestion on Main Street viaduct by serving as a by-pass. This route would also enable autoists to drive directly into the new office garage, park and enter the building all on one level.

Prominent in the sketches just released are viaduct connections to Kessler and White Oak Drive, to provide access to the new superhighway and open up bottlenecks that otherwise are expected to develop consequent upon the greatly increased traffic which the project will create.

The Katy's main line which will serve the office building is also projected to service the ground floor of the great new warehouse, Salmon said. Entire trains, it is planned, will be spotted along the south side of the industrial building, and unloaded in a matter of minutes by the newest mechanical means.

High above the railroad tracks, sketches indicated, a broad viaduct approached by ramp from White Oak Drive at one end and from the north end of Main street viaduct at the other is projected to provide complete truck loading dock facilities and main entrances to the gigan-

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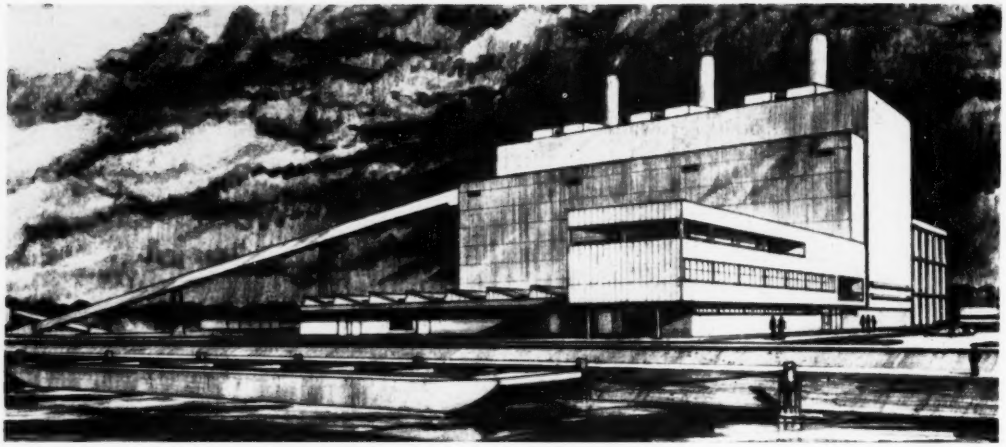


Above—Preliminary sketch of the $54,000,000 steam-electric generating plant to be erected at New Johnsonville, Tenn., by the Tennessee Valley Authority. President Harry S. Truman last month signed the bill appropriating first money for the initial construction.

Big T.V.A. Steam-Electric Station Authorized

CONSTRUCTION is being started immediately on the $54,000,000 New Johnsonville steam-electric generating plant on the shores of Kentucky reservoir, about 66 miles west of Nashville, according to George F. Gant, general manager of the Tennessee Valley Authority, which last month was authorized to spend an initial $2,500,000 in a congressional resolution signed by President Harry S. Truman.

Orders for equipment started going out as soon as word was received that funds had been made available. The orders for heavy equipment, such as turbo-generators and boilers which require a long time for delivery, had been held in manufacturers' schedules under orders contingent upon authorization of the steam plant.

Among the contracts now being made firm, are:

Three turbo-generator units, each with a capacity of 125,000 kilowatts, to the General Electric Co., Schenectady, N. Y., $7,448,700.

Three boilers from the Combustion Engineering Co. of New York, $4,338,640.

Six tractors, R. L. Harris Co., Knoxville, Tenn., $102,524.

Mobile crane, Buchanan Rooney Equipment Co., Nashville, Tenn., $25,935.

Shovel with crane, Harischfeger Corp., Milwaukee, Wisc., $52,634.

First of the turbo-generators is scheduled to be in operation in January, 1952. This unit will be "on the line" in time to help alleviate and reduce the length of the shortage said to threaten in the winter of 1951-52, due to the rapid growth in demand for power in the TVA region. The increased demand comes almost entirely from the municipal and cooperative distribution systems, now serving more than 900,000 consumers, and from Federal agencies, including the atomic energy plant at Oak Ridge, Tennessee. The other two units will follow at intervals of two months.

The plant will use up to 1,200,000 tons of coal in some years. For condensing purposes it will require 350,000 gallons of water a minute.

The construction force at the site will be steadily increased to reach a maximum strength of 1,100 employees by June 1950. It will remain at that figure until near the end of 1951. The permanent operating force at the plant will consist of about 300 employees.

First work at New Johnsonville will be to clear and grade the site, build construction access roads, railway spur tracks, and a dormitory camp.

Construction offices will be built at the site. Dormitories and a cafeteria building are to be moved from Kentucky Dam village. Initially there will be three dormitories, each housing from 60 to 80 men. More will be added as needed. Dormitory space will be provided only for those workers unable to find housing in the area.

Thirty-five single family houses will be moved by barge from Kentucky Dam and placed on lots in Waverly, 9 miles distant, and Camden, 11 miles from the site. Originally the houses were used by workers at Pickwick Dam; later they were barged to Kentucky for use there during the construction days.

Excavation for the powerhouse building and grading of the yard and coal storage areas will involve moving about a million cubic yards of earth and rock. Dredging for the harbor and docks will require handling a like amount of material.

The main plant building will be approximately 212 by 214 feet, extending to a depth of 43 feet below and a height of 128 feet above ground level.

The plant was planned and is being designed and constructed by TVA under direction of C. E. Blee, chief engineer; J. S. Bowman, chief planning engineer; and R. A. Monroe, chief design engineer.

Building the steam plant will be under supervision of John M. Counts, project manager. Mr. Counts now is project manager of TVA in the Wilson Dam area.

When completed the Johnsonville plant will be operated by the TVA Divisions of Power under G. O. Wessenauer, manager of power, and C. L. Karr, director of power operations.

The Authority, its officials say, is now facing the prospect of a shortage of power which is expected to materialize by the winter of 1951-1952, as the result of greatly increased demands for electricity in the Tennessee Valley, with "additional steam and hydro capacity" being "desperately needed." The number of consumers in the 80,000-square mile area is listed at 900,000.

"Preferred customers" of T.V.A. are the locally-owned electric distribution systems and the Federal agencies, it is pointed out, and these are requiring a progressively greater part of the Authority's power output. In the last year of the war, 57 per cent of the current went to these consumers. By 1952, the proportion will increase to nearly 75 per cent.

Municipal and cooperative systems in 1945 bought 3,333,000,000 kilowatt-hours from T. V. A. During the past year the figure had increased to 6,000,000,000 kilowatt-hours and by 1952, it is estimated to reach 9,000,000,000 kilowatt-hours. The total of residential users now served is about 800,000. Average annual consumption is approximately 2,600 kilowatt-hours.

Federal agencies, the other preferred customers, use about 2,500,000,000 kilowatt-hours a year. Most of this, it is pointed out, goes to the Oak Ridge atomic energy plant, which is the largest T. V. A. power purchaser. Expansion of that operation will increase the need there. By

(Continued on page 56)

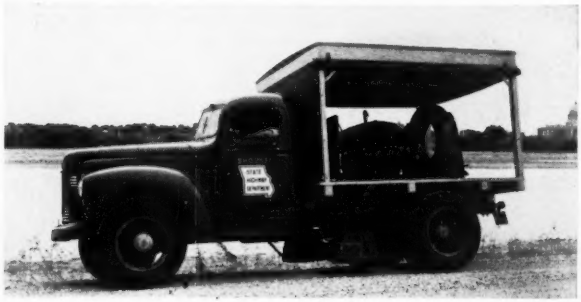
Above—Fast equipment for changing the landscape. An Oklahoma airport job is done almost between suns with this Caterpillar outfit.

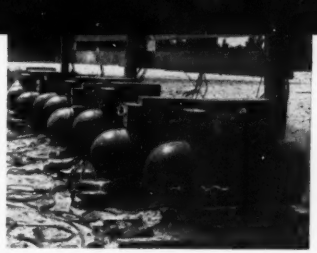
EQUIPMENT AT WORK

By L. H. Houck

Below—An old model Caterpillar slogs through the mud with a Lincoln Shield-Arc welder for Sinclair Products Co., near Houston, Texas. Equipment is owned by the H. C. Price Construction Co., Bartlesville, Okla.

Below—Generator outfit was made by the Missouri State Highway Department for picking up iron in highway. It is mounted on an International truck.





Above—Battery of Lincoln welders at a tank farm at Port Everglades, Fla.

Above—Caterpillar grader uses a corn field background to do a farm road in Tennessee.

Above—This is one of the cinder spreader outfits manufactured by the Highway Equipment Co., Cedar Rapids, Iowa.

Above — Allis-Chalmers grader on asphalt mixing job in Virginia.

Below—Big dippers fill Euclid dumps. General Motors Series 71 Diesel is the power.

Equipment and Material Makers' News

Caterpillar Diesel Plant Dedicated at Peoria

Caterpillar Tractor Co., Peoria, Ill., has dedicated its new Diesel Engine Factory, the most modern production site in the entire industry.

With an area of 925,000 square feet contained within its rectangle, the factory represents four and one-half years of planning to convert from the planning boards a plant engineered for a specific operation, rather than a conversion of an operation to a specific type of building.

The building was designed, erected and equipped expressly for the economic manufacture of the company's line of Diesel Engines. Designated as Building KK in the extensive expansion of Caterpillar manufacturing facilities, the structure houses facilities to produce all of the Diesel Engines, merchandised as industrial power units, marine engines and electric sets, in the Company's line.

From the time the big earthmoving rigs bit into the land along the Illinois River and removed and filled some 202,500 cubic yards of dirt for the original foundation site, the company "pictured in its mind just what was wanted" and erected the building around the design so that machining, testing, shipping and other related engine work has been accomplished under one roof.

The factory measures 1,120 feet long in an east-west direction and 757 feet in north-south width. Features include the nearby casting storage yard, rough storage area inside the building, numerous conveyors to move rough material from storage to the machine lines, proper width of aisles, an efficient industrial railroad layout and the movement of material through an open inspection area. Its suitable space for storage of finished parts, the efficient application of bridge cranes, fork trucks and other related material control factors has given KK a flexible and efficient movement of materials and the last word in modern mass production.

A fitting example of the ingenuity and engineering that went into the company's production is the fact that one man on the engine assembly line may work on 19 different engine models moving on a conveyor line.

The assembly area consists of three assembly lines for basic engines, two for erection, testing, painting and shipping of industrial engines, a test room and large areas for the storage of finished parts, both purchased finished and machine shop finished. All three basic engine assembly lines, running parallel, end in the same bay, where a bridge crane is used to remove the engines to a set of gravity roller conveyors along which they are moved by a drag chain into the test room and stored pending test.

The test room, adequately lighted, ventilated and elaborately soundproofed, is arranged in two banks of test cells, each bank serviced by a bridge crane to install engines from the conveyors and to remove them to the out-going conveyor to one of the two adjustment floors. There fixtures and gantry cranes have been provided to expedite necessary tear-down and adjustment work. The 21-celled area has the capacity to test two engines at a time in each cell. Its design provides the space and type of construction which promotes cleanliness, safety and efficiency. Engine exhaust in this new test room is dissipated through mufflers extending through the roof. All other service connections necessary when installing the engine on the test block are made to lines brought up through the floor from a basement extending under the entire test room.

Of the 925,000 sq. ft. floor area some 425,000 sq. ft. is devoted to machine shop. All of the area is on one floor with the exception of 150,000 sq. ft. on a T-shaped mezzanine above the main floor and 25,000 sq. ft. in a basement under the test cells. Showers, cafeterias and some offices are centrally located on the mezzanine and do not conflict or congest operations in the working area. The two cafeterias, strategically and conveniently located east and west, comprise 15,834 sq. ft. and are equipped to serve the 3,322 employees of KK.

The exterior of the building is of red brick, ornamented by cast stone. The roof is flat, less any window lights, and is constructed of cast tile fiber glass insulation, paper, tar and gravel. The floor is poured 8 inches thick with steel reinforcement rods on 12 inch centers and covered by 3-inch creosoted blocks. Columns inside the building are set on 50 ft. 6-inch centers the short dimension of the building and 40 ft. centers the long dimension of the building with the exception of the first bay in the building which is 100 ft. wide. Roof trusses are set to give a full 20 ft. clearance under the lower chord except in the 100 ft. bay where the clearance is 32 ft. Under the mezzanine the clearance is 12 feet.

The Diesel Engine Factory is the first major milestone in Caterpillar's post-war expansion program. Devoted exclusively to the manufacture of Diesel engines to power the company's Diesel track-type and wheel-type tractors and Diesel motor graders and to serve as well as stationary power units, the building permits integration of manufacturing processes and the expansion of facilities in older areas of the Peoria plant.

Below—Aerial view of Building KK, Caterpillar Tractor Co.

Allis-Chalmers Reelects Officers and Directors

Stockholders of the Allis-Chalmers Manufacturing Co., elected Walter Geist to his eighth term as president of the company, and at the same time reelected all officers and directors of the firm.

Directors renamed at the annual meeting are James M. Barker, Chicago, Ill.; W. C. Buchanan, Milwaukee, Wisc.; Arthur W. Butler, New York; Hugh Comer, Sylacauga, Ala.; James D. Cunningham, Chicago; W. G. Johnson, Milwaukee; Walter Kasten, Milwaukee; Ernst Mahler, Neenah, Wisc.; Louis Quarles, Milwaukee; Leigh Willard, Cleveland, Ohio; and W. A. Roberts, Milwaukee. Mr. Geist also was reelected to the board.

Reelected as officers in addition to Mr Geist are Mr. Johnson, executive vice president of the general machinery division; Mr. Roberts, executive vice president of the tractor division; E. H. Brown, vice president in charge of engineering development; W. E. Hawkinson, secretary and treasurer; J. A. Keogh, vice president and comptroller; Marshall L. Noel, vice president and general sales manager of the tractor division; J. L. Singleton, vice president and director of sales for the general machinery division, and H. W. Story, vice president and general attorney.

Officers reappointed by the board are C. P. Allendorf, assistant comptroller; N. D. Johnson, assistant secretary; G. F. Langenohl, assistant treasurer, and J. F. Ryan, assistant secretary and assistant treasurer.

A dividend of 81¼ cents per share was declared on the issued and outstanding 3½ per cent cumulative convertible preferred stock, payable June 5, 1949, to shareholders of record at the close of business May 20, 1949. The regular quarterly dividend of 40 cents per share was declared on the issued and outstanding common stock of the company, payable June 30, 1949, to shareholders of record June 7, 1949. In the comparable quarter last year the company paid a dividend of 40 cents on the common stock.

Harnischfeger Corporation Names George Staudt

George L. Staudt has been appointed advertising and sales promotion manager of Harnischfeger Corp., of Milwaukee, Wisc.

During World War II Mr. Staudt served as chief, Counter Intelligence Corps Branch, G-2, War Department. Prior to entering the service, he was assistant advertising manager for the Illinois Central Railroad and at one time employed with the Benson and Dall Advertising Agency, both of Chicago.

During the past year he has been president of the Dayton Advertising Club. In Dayton he was active in publicity work with the Community Chest Campaign and was in charge of advertising for the Dayton visit of the Freedom Train. Mr. Staudt was graduated from the University of Illinois.

New TL-W Tracto-Loader

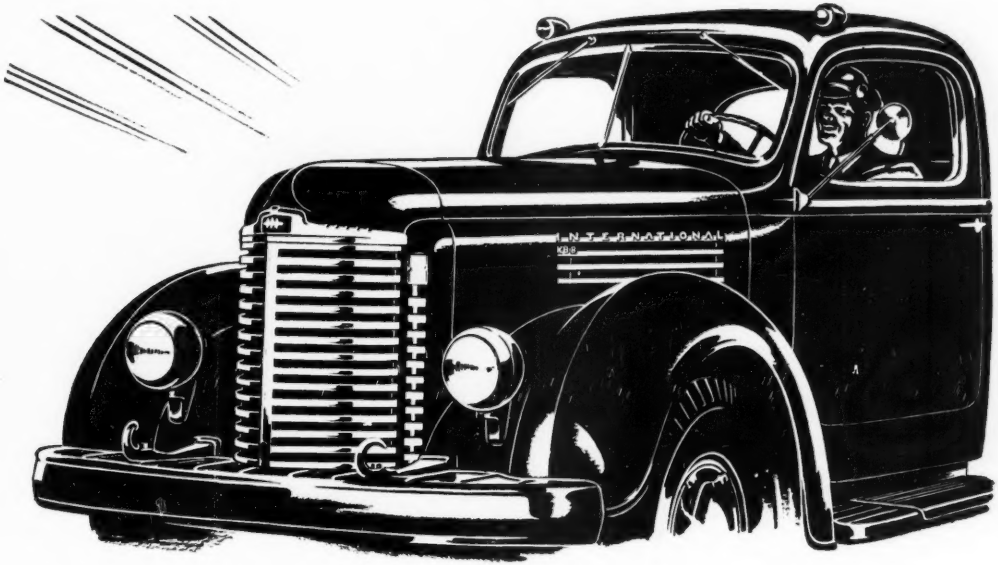
The new materials handling loader, TL-W Tracto Loader manufactured by the Tractomotive Corp., Deerfield, Ill., is especially designed to eliminate the necessity of dumping part of a load to keep from bogging.

Having a standard bucket of one-half cubic yard, the new unit is mounted on rubber tires and has the bucket over the driving wheels with the steering wheels in the rear. This design, according to the manufacturer, lessens operator fatigue, provides exceptionally good traction and makes steering easier particularly where the going is soft. The bucket is hydraulically operated and positively controlled. It can be dumped in part or all at once and will fully load average dump trucks.

TL-W's short overall length of 12', with the bucket down, and its narrow width of 5'9" enable it to be used where working areas are limited. Close quarter operation is possible because it does not have to ram material to get a load. The bucket is eased into the material and picks up the load through a forward crowding action and a "tilt back" feature. Special service features that simplify maintenance of the hydraulic system include one-piece, seamless steel tubings and hydraulic hose lines with detachable and re-usable fittings.

The Tracto-Shovel, built for the Allis-Chalmers Model HD-5 Track-Type Tractor is also a product of the Tractomotive Corporation.

First in heavy-duty truck sales for 17 straight years!



America's most exacting truck buyers AGAIN give Internationals a vote of confidence!

Actual 1948 registration figures for new trucks of 16,001 pounds and greater GVW ratings show this nationwide preference for Internationals:

Internationals	**26.4%**
Truck "B"	**14.3%**
Truck "C"	**13.3%**

This marks the 17th successive year that Internationals have led in heavy-duty truck sales! Would men who buy on a basis of performance give a No. 1 rating to any truck unless it gave them a No. 1 value?

Outstanding value—right down the line! The same basic values that have kept Internationals first for 17 straight years in the heavy-duty field, are yours in any International Truck model. Heavy, light, or medium-duty, your International Truck is *all* truck. There's no compromise with passenger car design.

Trucks built to meet your requirements. Among the 22 basic International Truck models and 1,000 different truck combinations, there's a truck that's right for *your* job. In the range of gross weight ratings, from 4,400 to 90,000 pounds, you get the power, the frames, the axles you need for efficient hauling.

PLUS—the nation's largest exclusive truck service organization! 4,700 International Truck Dealers and 170 Company-owned Branches are ready with trained mechanics, precision-engineered replacement parts and low-cost rebuilt exchange units . . . ready to keep your International rolling at peak efficiency.

A truck transportation engineer is ready to help you! Call your nearest International Dealer or Branch, and find out how Internationals can step up the efficiency of your hauling. Trained International Truck transportation engineers will help you analyze your job—recommend a truck to lick it. If you're interested in profits, you'll call *soon!*

International Harvester Builds McCormick Farm Equipment . . . Farmall Tractors . . . Industrial Power Motor Trucks . . . Refrigerators and Freezers

Tune in James Melton and "Harvest of Stars," NBC, Sunday afternoons

INTERNATIONAL TRUCKS

INTERNATIONAL HARVESTER COMPANY • CHICAGO

Equipment and Material Makers' News

Above—New P. & H. warehouse recently built at Teterboro, N. J.

Harnischfeger Expands

Harnischfeger Corp. last month celebrated the opening of its new Teterboro, N. J. warehouse and offices. A new approach to open house gatherings was used. Visitors were given the opportunity to operate the various pieces of equipment. Sound motion pictures of welding and construction equipment were shown continuously through the day. Especially interesting to many were the recently developed diesel engines. A mechanic demonstrated the simplicity of servicing these engines by speed tear-downs and build-ups.

With completion of this new warehouse, P&H hopes to provide faster service to Eastern customers. A large inventory of equipment, including excavators, truck cranes, welding machines and electrodes, hoists, etc., will be maintained at this new location for supplying the eastern area.

Located approximately 16 miles from New York City, the new Teterboro quarters contain over 14,000 square feet of floor space and are situated on an 8½ acre plot of land. The building, in addition to warehouse space, includes large offices and service facilities. Rail service will be over the spur tracks of the Erie Railroad.

The new Teterboro building, located just off Highway 6 at Huyler and North, was designed and built by the Austin Company, Chicago.

Huber Rollers Help Build Argentine Airport

Twelve Huber 10-ton 3-wheel rollers are being used in the construction of General Pistarini airport at Ezeiza near Buenos Aires, Argentina. The rollers have been working on the vast project since its inception. Prior to that, they aided in the building of the recently-completed 20-mile two-lane access highway leading from the Buenos Aires city limits to the airport site.

On the airport job, the 12 Hubers have been used mainly in the construction of the field's 12 planned giant runways. Three of the runways have been completed and are now in use. These are No. 1 and No. 2 runways, each 5,576' long and approximately 230' wide and No. 3 runway, 6,888' long and 260' wide. The thickness of the bituminous concrete base for the runways is 4.3".

When completed, General Pistarini Airport near Buenos Aires will be one of the world's largest, most modern and radically different flying fields. The most advanced kind of engineering planning has provided the airport with a unique and highly efficient runway system.

Impact Breaker for Gravel Units

A new double impeller impact breaker designed for secondary crushing and small gravel installations is now being produced by the New Holland Manufacturing Co., Mountville, Pa.

Using the proved New Holland principle of breaking stone by impact in suspension, the new Model 1212 will handle material passing a 12 inch square opening. It is designed to produce crushed aggregate as fine as one inch minus in a recirculating system.

With production of the Model 1212, New Holland now has four models of double impeller breakers in the field. The company began with the Model 3030 and when this new principle of breaking proved successful it added the Model 2020 and the Model 5050, the latter the world's largest impact-in-suspension breaker.

The Model 1212 differs from its big brothers in only two major aspects: size, and the use of rotor rolls in the two impellers instead of four-cornered impeller bars. The Model 1212 is the smallest breaker made to produce crushed stone by impact in suspension.

Use of rotor rolls in the impellers provides even-wearing breaking surfaces since the rolls automatically rotate when the breaker is in action.

Weight of the Model 1212 is 7900 pounds. It has an inlet feed opening of 128⅜" x 127⅝". Outlet discharge opening is 158⅜" x 65¼".

Below—Two of the 12 Huber 10-ton 3-wheel rollers working on the General Pistarini airport, near Buenos Aires, Argentina. Standing at right are Willis Nye, left, Huber export manager, and Robert Dobranich, a partner of Dobranich and Cia, Huber Distributor there.

Concrete Mixer Improved

Kwik-Mix Co., of Port Washington, Wisc. has announced important improvements in the design of the new Kwik-Mix 3½-S Non-Tilt Dandie concrete mixer in a recently published four-page bulletin.

Included in the new bulletin is a description of the "V" belt theory as applied to mixing drum rotation. The V-belts almost completely surround the drum which gives them an enormous gripping area. Customary gears and sprocket and chain are eliminated, and a simple bracket adjustment and spring maintains tension automatically and prevents slippage under any condition.

Other improvements noted on the new 3½-S Dandie include a non-tilt drum containing the exclusive Kwik-Mix design of blades and buckets that give a more complete and thorough mixing action; a new storage hopper that holds 5½-cu. ft. ready for charging the instant the drum is discharged for uninterrupted production; a radical variation in design which helps to prevent clogging changes the water entry to the charge side of the mixer, feeding water into the drum with aggregates. In addition, the new 3½-S Dandie is fitted with an automatic syphon type water tank which measures water to the mixing drum in the exact amount for most consistent quality concrete mixes.

U. S. Rubber Publishes Form Lining Manual

United States Rubber Co. has published a new manual on its Hydron absorptive form lining used in the construction of smooth durable concrete surfaces. The manual discusses methods of installation, relative costs, applications, specifications. It quotes statistics to prove the advantages of concrete forming with Hydron over wood forming. Hydron avoids concrete surface imperfections by absorption of air and water and by increasing surface density and abrasion resistance. The result is said to be less surface wear, lower maintenance costs.

Athey District Representative

William L. Benton, newly appointed Southeastern District Representative for the Athey Products Corp., Chicago, Ill., will serve the southern states from Virginia to Tennessee.

Prior to his Athey appointment, he served as a lieutenant colonel in the Corps of Engineers, and as executive officer of the Nashville District, Civil Works and Harbors. Before entering the service, Mr. Benton was manager of the Southern Tractor and Equipment Co. for five years, and two years as Industrial Sales Manager for the Tri-State Machinery Company.

Prior to joining the equipment distributor ranks, Mr. Benton was sales representative for the J. D. Adams Co. This former experience will serve him well in bringing factory assistance to users of Athey Force-Feed Loaders, MobiLoaders, Forged-Trak and Rubber-Tired Trailers, and other products of the Athey line. Headquarters will be maintained at Atlanta, Ga.

Link-Belt Promotes Craig, Perry and Kolar

Link-Belt Co., Chicago, Ill., announces the following promotions:

Allan Craig, sales manager of the company's southeastern division since 1945, with headquarters in Atlanta, is being transferred to Houston, Texas, in the capacity of general manager of the southwestern division, where a new Link-Belt plant is about to be opened.

Michael J. Perry, district manager at Moline, Ill. since 1946, has been appointed sales manager, southeastern division, with headquarters at the Atlanta plant, to succeed Mr. Craig.

Andrew K. Kolar, district sales engineer at Moline, Ill. since 1947, has been appointed district manager, in full charge of this office.

Mr. Craig started his Link-Belt career in 1923, in the engineering department of the gained his initial engineering training at Drexel Institute of Technology.

Mr. Perry started in 1922, in the engineering department of the Pershing Road plant in Chicago. He studied mechanical engineering at Armour Institute and business management at Northwestern University.

Mr. Kolar joined the Pershing Road plant in 1935 in the capacity of shop apprentice upon graduation from Purdue in Mechanical Engineering. Successively, he has served in shipping, foundry, steel shop, machine shop, rate setting, production, construction, sales and engineering departments.

LIGHT IN WEIGHT

BIG IN VALUE

B37 Paving Breaker

joins famous Gardner-Denver family

Weighs only 38 pounds! Yet the Gardner-Denver B37 Paving Breaker is packed with many of the same big values that have proved so popular in the medium B67 and heavy B87 machines.

The tough-slugging B37 makes fast work of light demolition jobs. It's light and safe in the hands of the operator who must work from scaffolding, or wherever footing is treacherous. It's built to endure years of hard work. Here are some of the reasons why:

Renewable chuck liner — easily replaced at low cost — a new liner protects both tool and breaker against a loose-fitting shank.

Double-life hammer — block type piston hammer is reversible for double life — an exclusive feature. Use of tappet minimizes wear on hammer striking face. Tappet operates in renewable bushing.

Extra safety — exclusive throttle valve lock works like the safety on a gun — prevents accidents before they happen.

Easy riding — fast cutting action without violent recoil means less operator fatigue. Holding handles stay cool.

Low air consumption — with efficient low-lift plate valve. Long piston stroke gives hard-hitting blow. Exhaust will not "freeze."

Quick acting latch type steel retainer — holds tool securely.

Positive lubrication — integral oil reservoir meters oil to every working part, including tool shank. Lubricated shank reduces chuck wear and breakage of gads.

For complete information, write Gardner-Denver Company, Quincy, Illinois.

Specifications for GARDNER-DENVER B37 PAVING BREAKER

Weight	38 lbs.
Piston Diameter	1⅞"
Length	22"
Size of Tool Shank	1" Hex. x 4¼"
Air Hose Recommended	¾"
Weight, Boxed for Shipment	61 lbs.
Boxed Dimensions	8" x 16" x 26" 1.9 cu. ft.

GARDNER-DENVER

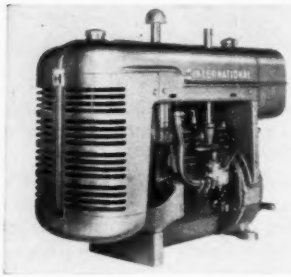
SINCE 1859

Equipment and Material Makers' News

New International Harvester 16-Horsepower Engine

The International U-1, a new four-cylinder gasoline engine for a wide range of "Cub-horsepower" applications, has been announced by the industrial power division of International Harvester Co., Chicago. Addition of the 16-horsepower U-1 expands the International line of carbureted engines to five, ranging up to 55 rated horsepower.

The new engine is suitable for powering fans or blowers, oil or water pumps, generators, portable in-plant or outdoor units, carnival equipment, and for many other installations. It is available as a stripped engine or with job-engineered attachments up to a complete power unit, and can be equipped to operate either on gasoline or natural gas.



Above — Four-cylinder International Harvester U-1 for Cub-Horsepower Application.

Stripped, the U-1 delivers a maximum of 16.3 brake horsepower at 2500 r.p.m. It develops a maximum of 16 working horsepower equipped with fan, radiator and air cleaner. Overall dimensions of the engine are: 26-13/32 inches, length; 16-11/32 inches, width; 25 inches, height. The engine itself weighs approximately 280 pounds; the complete power unit, 450.

Detroit Diesel Engine Mobile Training Unit

The Detroit Diesel Engine Division of General Motors Corp. has developed a "mobile training unit" for instructing owners and operators of General Motors series 71 diesel engines.

A complete service training facility, the unit backs right up to the door and in a matter of minutes is ready to put on a thorough course in specialized Diesel engine mechanics. The whole package is contained in a smartly designed GMC 2 ton cab-over-engine truck. Its classroom equipment includes such items as a cutaway model of a 3 cylinder GM Series 71 Diesel, a fully equipped standard engine, monometer testing apparatus, cutaway sections of principal sub-assemblies, charts, movies, slides and many other pieces. In fact every necessary training aid used in the conduct of modern and effective instruction work has been provided for.

Below — G. M. Diesel power service training unit. All necessary items for maintenance instruction are included in the training package.

Two experienced and competent instructors, selected from Detroit Diesel's service training staff, handle the teaching assignment.

The unit is currently touring the country with a special program prepared for the education of contractor's operating and maintenance personnel.

Courses are designed for 2 or 3 days duration depending on the contractors specific need and desires. Instruction is divided into 5 major parts:

1. Operating characteristics of the General Motors Series 71 2 cycle Diesel.
2. Engine construction with emphasis on the flow of fuel, lube oil, water and air.
3. Maintenance and repair of the various "flow" systems.
4. Engine tune-up and diagnosis.
5. Intelligent preventive maintenance procedures.

The Mobile Training Unit's itinerary, which is scheduled in advance, includes visits to major construction and mining projects as well as stops at GM Distributor points where groups of smaller contractor's personnel can be assembled.

Foote Company Announces New Bucket Controls

Foote Co., Inc., of Nunda, N. Y., subsidiary of Blaw-Knox Co., announces new bucket controls for the MultiFoote paver. These controls are designed to be used with the bucket on the MultiFoote HighLift Boom and are mounted on the bucket itself. They permit the smooth operation of the bucket doors for any degree of opening, allowing the delivery of anything from a shovelfull to the full bucket load of concrete. The man spotting the bucket can thereby deliver the desired amount of material with an accuracy that is impossible where control must be done from the paver deck. This is particularly advantageous when feeding direct to a Pumpcrete, where the whole bucketload cannot be delivered at once and where the feed of the Pumpcrete must be watched, or to hoppers, spouts or concrete buggies that cannot handle the full bucket capacity.

Diesel Electric Excavator Announced by P. & H.

The P. & H. 4 to 4½ yard diesel electric excavator, Model 1400 DE, which provides a new kind of power combination to large shovel users is being manufactured by the Harnischfeger Corporation, Milwaukee 14, Wis.

The new P. & H. machine provides electric shovel efficiency independent of power line service. These new shovels have a heavy-duty, slow-speed diesel engine which powers crowd and swing generator sets. Connected to the diesel engine by a heavy-duty, multiple "V" belt, the generator set with alternator is designed specifically for shovel service with a swing and crowd generator mounted in one frame. Low field current and specially designed magnetic field structure combine to develop much faster response to changes of both load and control. A constant-duty, low voltage alternator provides steady power for "Magnetron" control, blowers, lights, etc.

Made possible by P. & H.'s "Magnetorque" Hoist Drive, which eliminates the hoist generator, hoist motor, slip friction clutches and other mechanical devices usually involved in the hoist train, the new electric shovel's simplification is complete. The cushioning characteristic of the "Magnetorque" drive, combined with that of the electrical power system of the crowd and swing, relieves the diesel engine of the severe "pull down" in speed common to friction type shovels. The heavy duty engine easily maintains a steady flow of power under all loads.

A. C. Synchronous Motors

Operating advantages and construction features of bracket bearing synchronous motors in sizes from 30 to 1000 horsepower are described in a new 16-page bulletin (05B6112A) released by the Allis-Chalmers Manufacturing Co., Milwaukee, Wisc.

In addition to a complete line of standard, open-type synchronous motors, Allis-Chalmers is equipped to build motors with special features to satisfy virtually any service requirements, the bulletin points out. These include units with grease lubricated anti-friction bearings, enclosed collector assemblies, semi-protected, protected, drip-proof, splash-proof, separately ventilated, and totally-enclosed motors.

Motors for belted service, in general, are of the same construction as those for direct connection, although there are rating and speed limitations on their use, the bulletin explains. Shown is a table of the sizes to which bearing pressures limit the application of two bearing motors.

Vertical synchronous motors, which are built in all sizes for pump drives and other applications, exciters and starters, are also touched upon in this bulletin.

New Lima Machines

Lima Shovel and Crane Division of Lima-Hamilton Corp., Lima, Ohio, announces three new rubber-tired machines—the Types 34-T, 34-M and 604-M.

The Type 34-T is mounted on a truck chassis with independent power (two engines —one in the rotating assembly, which powers all shovel and crane operations, and one in the truck, which is used for propelling the carrier). Standard equipment includes a 5-speed main transmission and 2 speed auxiliary transmission which facilitates 10 speeds forward and 2 reverse. The adaptor casting which includes the machined roller paths and internal swing gear is welded to the truck frame. Upon this casting is mounted the rotating assembly which includes the basic features of the Type 34 Paymaster, but with alterations to facilitate adaption to truck mounting.

The Type 34-M is a self-propelled unit with one engine mounted in the rotating assembly supplying the power for all operations including propelling in either direction. Power for propelling is transmitted from the standard reversing clutches in the rotating assembly thru a special train of gears and the vertical propel shaft to the wheeled mounting. A two speed transmission is standard.

A four speed transmission is available if desired. Service brakes are on all wheels. They are operated by air. Steering is accomplished thru a hydraulic system. The Types 34-T and 34-M can be kept busy because of their versatility and mobility. They are ideal units for digging basements, sewer construction, cleaning ditches, material handling around industrial plants, logging, removing road slides and many other jobs of similar nature. Either type can be equipped for shovel, crane, clamshell, dragline or pull shovel operation.

The Type 604-M rotating assembly incorporates the basic features of the Lima Type 604, but with alterations to facilitate adaptation to truck mounting. Like the Type 34-M, one engine, mounted in the rotating assembly, supplies the power for all the operations including propelling in either direction. Rigid type outriggers are standard equipment. The carrer is equipped with oscillating tandem type rear axles, which provide extra flexibility when working on uneven terrain. The Type 604-M is especially adapted to log loading and any material handling work requiring lifting capacity of 35 tons. When equipped as a clamshell, this machine, like its smaller counterpart, the Type 34-M, offers many advantages from the standpoint of stability, mobility and resistance to abrasive wear on the propelling mechanism.

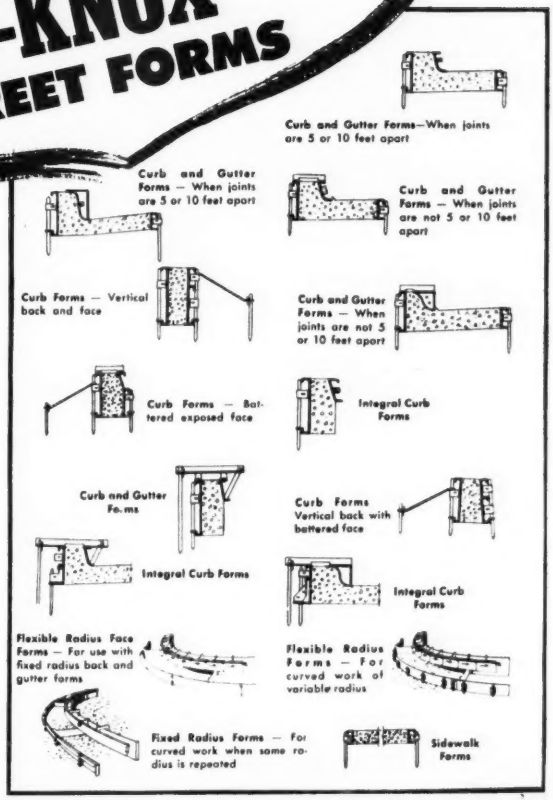
Below—Lima Type 604-M, mounted on Maxi CC-25 wheels, equipped with 45-foot boom, crane rigged.

Look at the variety of work you can do with a set of BLAW-KNOX STEEL STREET FORMS

ONE set of Blaw-Knox Steel Forms handles *every* concrete curb, curb and gutter or sidewalk job, from simple straight work to serpentine or curved shapes. They are standardized for complete interchangeability! You can use them over and over again, in combinations to fit your needs for every type of street paving work . . . concrete curb, curb and gutter, integral curb, special curb or sidewalk. Blaw-Knox Steel Forms give you *better work* at *lower cost*. Finished jobs have a smooth perfection impossible to achieve with wood forms, and costly hand finishing is eliminated. Expensive carpentry on curves, always the most expensive and difficult to construct, is unnecessary. There's no time wasted waiting for wood forms to be built. Labor costs are cut to the bone. Blaw-Knox Forms are easy to set and strip, easy to handle and transport. Form maintenance is practically non-existent.

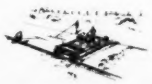
Get a set of Blaw-Knox Steel Forms now to insure more profit on your next job, and *all* future jobs.

SEND FOR THE NEW BULLETIN, No. 2259, for complete information on the Blaw-Knox Steel Street Form System. 28 pages of detailed illustrations show form set-ups for every type of work with complete instructions on how to use them. You can select the forms you need to speed completion of your work and make more money for you.


Curb and Gutter Forms—When joints are 5 or 10 feet apart
Curb and Gutter Forms — When joints are 5 or 10 feet apart
Curb and Gutter Forms — When joints are not 5 or 10 feet apart
Curb Forms — Vertical back and face
Curb and Gutter Forms — When joints are not 5 or 10 feet apart
Curb Forms — Battered exposed face
Integral Curb Forms
Curb and Gutter Forms
Curb Forms Vertical back with battered face
Integral Curb Forms
Integral Curb Forms
Flexible Radius Face Forms — For use with fixed radius back and gutter forms
Flexible Radius Forms — For curved work of variable radius
Fixed Radius Forms — For curved work when same radius is repeated
Sidewalk Forms

AGGREGATE PLANTS

TRUCK MIXERS


FINISHING MACHINES

CLAMSHELL BUCKETS

BULK CEMENT PLANTS

MULTIFOOTE PAVERS

BLAW-KNOX

BLAW-KNOX DIVISION OF BLAW-KNOX CO., Farmers Bank Bldg., Pittsburgh 22, Pa.

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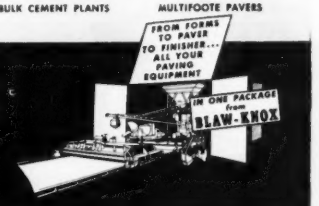


DISTRIBUTORS THROUGHOUT THE SOUTH

Humble Oil to Spend $155,000,000 in 1949

Humble Oil & Refining Co. has a $155,000,000 capital investment program under way this year, according to Rines E. Isbell, president, who points out that the expenditure is almost 50 per cent larger than the record $102,500,000 for last year. About $125,000,000 of the 1949 total will be for exploration and drilling, construction of new gas conservation plants and improving and increasing petroleum production facilities.

The 1949 drilling program calls for completion of 850 wells as compared with 568 drilled in 1948. Humble's natural gas conservation program will be stepped up in 1949 with the completion of plants that will conserve and utilize more than 250 million cubic feet of gas daily. Plants now under construction include those at Kelsey, Conroe, Pelican, Four Sixty Thompsons and Saltgrass in Texas and Rattlesnake in Louisiana. In addition two plants at Sealigson and Slayton have already been completed this year.

Humble's 1949 investment program, Mr. Isbell said, continues the established policy of maintaining earnings to provide more oil and improved quality products for the future. In 1948, because of heavy investments of capital, improvements in prices and a continued vigorous and forward activity in the industry, expenditures reached the increased figures. Now the industry again has a backlog of crude developed reserves which, especially in national security emergencies, allowing for the normal increase in the use of petroleum products that may be expected in an expanding economy.

Santa Fe Improvements Total $119,000,000

Gross capital expenditures of the Atchison, Topeka and Santa Fe Railway in 1948 totaled $75,357,716 and were divided $39,061,216 for equipment and $36,066,500 for roadway. Substantial parts of the program have been carried over into 1949 due to scarcity of materials and builders' inability to deliver all new equipment previously scheduled for 1948 production.

Commitments for new diesel locomotives, new freight cars, new passenger cars and improvements to other facilities approximate $115,000,000, although not all of that amount will be spent in 1949 as some orders for diesel locomotives and passenger cars cannot be fulfilled until 1950. Additions and betterments in 1948 included the following:

Centralized traffic control, 76.8 miles installed between Canyon, Texas and Texico, New Mexico and 36.4 miles between Newton and Mulvane, Kansas. Progress made on 108.3 miles between Wellington and Waynoka, Oklahoma.

Automatic block signals completed between Buffalo Gap and Sweetwater, Texas, 44.9 miles. Progress made on 93.3 miles of unfinished sections between Temple and Brownwood, Texas.

Work progressed on the new electric retarder "hump" yard at Argentine, Kansas (Kansas City), the Company's great new classification yard. A $6,000,000 project is to put it in service in 1949.

New commissary building, constructed at Chicago, see picture in the issue—80 x 325 stories of the most modern utilizing the most modern methods of food handling and preparation which produce efficiency and economy in dining car operations.

Replaced, enlarged or remodeled several important station facilities.

Acquired mechanized equipment for track maintenance work, modern rail laying machinery and tools, and motorized freight handling facilities for station use.

Improved wash room, locker room and toilet facilities to better working conditions at many locations.

Equipped 40 railway grade crossings with automatic signal protection. Flasher protection at grade crossings continue to increase in number.

Other additions and betterments made in connection with relocations and grade reduction projects now under way include several separate construction of subways; track relocation at place to place providing yards and serving facilities for expanding steam operations; replacing existing worn out cars with modern devices; products of economies and efficiency in operation, including radio communication in the larger freight terminals and freight-to-yard radio on trains in mountain territory, and various other types of improvements.

$190,000,000 Pipe Line

Fish Engineering Corp., with offices in the M & M Building in Houston, are preparing plans for construction of a $190,000,000 gas pipeline project for Transcontinental Gas Pipe Line Corp., it was announced recently. The big project will include a 30-inch line from Brownsville, Texas, at the foot of the Rio Grande Valley, to New York. Six or more compressor stations will be built along the line.

Murdock Joins Robert

Harold R. Murdock has joined Robert and Co. Associates, architects and engineers of Atlanta, Ga., which recently announced establishment of a paper and chemical department, which, together with their other engineering departments, will provide a complete consultation and engineering service for the wood pulp, paper and chemical industries. Mr. Murdock will be in direct charge of this new activity.

Robert and Company Associates has been an outstanding firm in the engineering field for over thirty years, during which period they have handled the design of industrial projects aggregating in value a billion dollars. They retain a staff of over two hundred architects and engineers, and their activity includes industrial projects located in all sections of the country, as well as in foreign countries.

Mr. Murdock has been active in the paper and chemical field for over 36 years. The past 21 years have been essentially with the pulp and paper industry, while the earlier years were with many chemical companies engaged in the production of heavy chemicals, organic chemicals, dyestuffs, pharmaceuticals, rubber products, the reclamation of rubber, the production of pencils and other wood consuming products.

He was Director of Research of the wood pulp divisions of Champion Paper and Fibre Co. at Canton, N. C., and Houston, Texas. He was also vice president of a Champion subsidiary, Hamilton Laboratories, Inc., and the originator of Merfenciopen, the first convenient method for applying organic mercurial chemicals in destroying slime forming organisms in paper making systems. This product of Hamilton Laboratories has had wide application in the paper mills of many countries.

In 1946 Mr. Murdock established a private consultation practice. He was retained by a number of pulp and paper companies on processing problems. During the last three years Mr. Murdock served as General Manager's staff assistant in charge of the Pulp and Paper laboratory, Forester Division, Bureau Reclamation. He organized the Joint Secretary conservation of the Pulp and Paper Industry.

Steelcraft Door Frame

Steelcraft Manufacturing Co., Bessemer, Ala., has announced producing an interior exterior steel door frame for residential and commercial building. The frame presents a neat appearance and requires no upkeep. It is said to be weather proof, combining durability in accordance with economy of cost and installation. It is made with overlapped joints at all four corners of the finished panels, using a universal adjustable head or sill frame, a completely enclosed door jamb unit, and hinges applied to the jambs. The frame is shipped as a complete single unit.

Community Relations Experiment

Several hundred West Allis, Wisc., business executives were the guests recently of the Allis-Chalmers Manufacturing Co. and the local Rotary Club who elected to spend the day acting as Rotarians. For a day.

This new and highly successful experiment in community relations occurred in the firm's cafeteria immediately after the schedule noon serving. Executives started the day by helping the regular cafeteria staff serve the luncheon. Rotary Club members took the executives' places at the tables and enjoyed their food as served by the executives. Then, with aprons and towels, Rotarians who washed the dishes received a real treat. Just plain old fashioned kitchen police duty, and executives relished it.

After the dishes were cleared and cafeteria cleaned, there were singers, dancers, entertainers. There were also talks by executives which explained that of the sweatiest night club. Many of the members and patrons who helped arrange the affair agreed to stay away for the occasion. They felt their presence might dissipate the friendly atmosphere and lead to encourage a mature and responsible attitude among the residents.

The party was a success. Many executives said it was one of the world and patrons expressed their desire to see this unique approach to community relations become an annual affair.

Chain Belt Dealer at Jackson, Miss.

Chain Belt Co., of Milwaukee, Wis., announces the appointment of the Watkins-Aldridge Equipment Company, Ltd., South State street, Jackson, Miss., as distributors of the complete line of Rex construction machinery in the state of Mississippi south of and including the counties of Bolivar, Sunflower, Tallahatchie, Grenada, Webster, Clay and Lowndes.

The Watkins-Aldridge company was formed in October of 1945 by E. C. Aldridge and Meeks Watkins. Both, Mr. Aldridge and Mr. Watkins had previously operated their own equipment businesses in Mississippi and are very well known among contractors and highway officials.

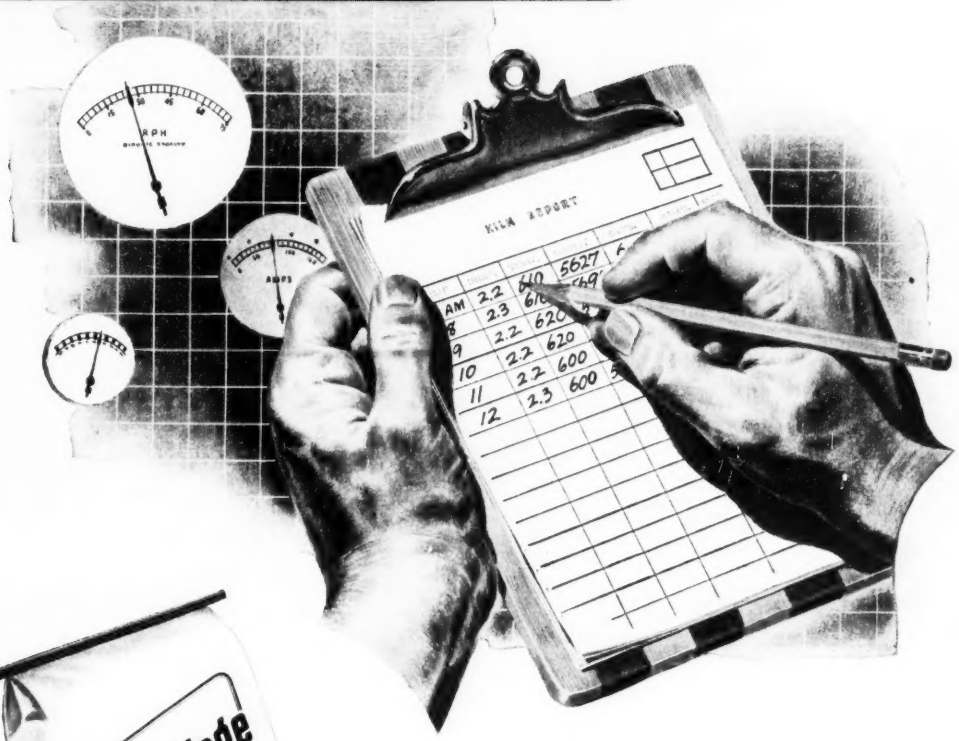
The complete line of Rex Construction Machinery, which Watkins-Aldridge company will handle, includes Rex building mixers; plaster and mortar mixers; horizontal and bi-discharge truck mixers; self-priming centrifugal pumps; diaphragm pumps; 34E single and double drum hydrocycle pavers; and the Pumpercete, the pump that pumps concrete.

The new dealer is also headquarters for other nationally known lines of construction machinery, including Austin-Western, LeRoi, Northwest, and many other leading lines.

New I.-H. Sales Engineers

J. G. Wiegand and R. R. McKiel have been appointed sales engineers specializing in the sale of International Harvester industrial power products to manufacturers, according to an announcement by Neal Higgins, manager of sales, International Harvester Company's industrial power division.

Sharp lookout *



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Southern Construction Projects

TEXAS

(Continued from page 24)

AUSTIN — Giesecke, Kuehne & Brooks, Archts., have preliminary plans completed and final plans to start soon for additions and alterations to Breckenridge Hospital, $1,250,000.

AUSTIN — Allandale Shopping Center, W. Murray Graham, Noah Bldg., Austin, received low bid, $208,533 from Leslie F. Crockett Construction Co., 112 Academy Dr., Austin, for shopping center on Burnet Rd. and Northland Dr.

AUSTIN—State Highway Commission received low bids for projects in following counties:

Van Zandt—Hwy. US 80, 4.876 mi.; Texas Bitulithic Co., P. O. Box 5297, Dallas, $209,602;

Bastrop—Hwy. 20, 10.189 mi.; McKown & Sons, P. O. Box 151, Austin, $217,902;

Dallas—Hwy. US 75, 5.42 mi.; M. E. Worrell, P. O. Box 546, and Worrell & Watkins, P. O. Box 278, both of Junction, $636,942;

Cooke—Hwy. US 77, 2.715 mi.; Worth Construction Co., P. O. Box 531, Fort Worth, $188,456;

San Jacinto—Hwy. US 59, 12.559 mi.; Public Construction Co., P. O. Box 380, Denton, $131,397;

Harris—Hwy. US 75, 909 mi.; M J Construction Co., Inc., P. O. Box 1111, Beeville, $245,853;

Newton—Hwy. FM 363, 11.025 mi.; L. W. Pelphrey Co., P. O. Box 1106, Gladewater, $148,888;

Hopkins and Hunt—Hwy. US 67, 16.176 mi.; Wallace & Bowden, 5513 E. Grand Ave., Dallas, $666,000;

Bowie—Hwy. FM 561, 18.22 mi.; L. H. Lacy Co., 5630 Yale Blvd., Dallas, $175,948;

Waller—Hwy. US 290, 9.459 mi.; E. B. Darby & Co., P. O. Box 467, Pharr $168,323;

Lubbock — Hwy. US 84, 9.402 mi.; Ernest Loyd, P. O. Box 1120, Fort Worth, $310,240;

Titus — Hwy. FM 71, 10.243 mi.; Pioneer Trucking & Contracting Co., Grapeland, $103,896;

Falls—Hwy. St. 7, .543 mi.; Davis-Pace Co., 313 Great National Life Bldg., Dallas, $285,513;

Jackson—Hwy. FM 719, 15.851 mi.; Heldenfels Brothers, Rockport, $153,778;

Dallas—Hwy. US 67, 4.508 mi.; Public Construction Co., P. O. Box 380, Denton, $388,366;

Castro — Hwy. St. 86, 11.772 mi.; Ernest Loyd, P. O. Box 1120, Fort Worth, $114,263;

Nueces—Hwy. US 181, 0.000 mi.; Brown & Root, Inc., P. O. Box 1139, Austin, $140,000;

Palo Pinto—Hwy. St. 254, 8.410 mi.; John P. Buckner & Sons, P. O. Box 76, Cleburne, $187,188;

Dallas—Hwy. 183 & Loop 12, 5.401 mi.; Texas Bitulithic Co., P. O. Box 5297, Dallas, $340,458;

Anderson and Cherokee—Hwy. US 84, 1.571 mi.; Vilbig Construction Co., P. O. Box 5926, Dallas, $165,785;

Wood—Hwy. FM 49 & 778, 12.419 mi.; Howard Brothers, Madisonville, and R. B. Butler, Inc., P. O. Box 471, Bryan, $125,848;

Coryell—Hwy. St. 36, 4.892 mi.; Fred Hall & Son, Valley Mills, $170,452;

AUSTIN — Giesecke, Kuehne & Brooks, Archts., plan additions and alterations to Breckenridge Hospital, $1,250,000.

BAYTOWN—Baytown Independent School District let contract to Tellepsen Construction Co., 1710 Telephone Road, Houston, $174,000 for school facilities.

BEAUMONT — Beaumont Country Club plans remodeling present two-story building and constructing an addition; $200,000.

BEAUMONT — Beaumont Independent School District let contract to Farnsworth and Chambers, Inc., P. O. Box 74, Houston, $135,771 for additions and repairs to Millard School.

BEAUMONT — City let contract to Trotti and Thompson, 2940 Crockett St., Beaumont, $124,162 for storm sewers.

BEEVILLE—Bee County plans remodeling three-story Courthouse, $136,000.

BRYAN—College Avenue Baptist Church received low bid from L. V. Haltom at $366,986, for church.

CAMP HOOD—District Engineer, 606 Santa Fe Bldg., Galveston, let contract to Shaw and Estes, 1407 S. Akard St., Dallas, at $1,052,294, for housing and utilities, Inv. No. 41-243-B-282.

CARTHAGE—Carthage Independent School District received low bid from Campbell and Kay, P. O. Box 836, Tyler, $188,750 for school and gymnasium.

CORPUS CHRISTI—Powell Baker, Tuscaloosa, Ala., J. Q. Adams and Fisher and Joe J. Aisup, Corpus Christi, Tex., plan 342 unit apartment project; $2,646,000.

CORPUS CHRISTI—Adams & Baker, First National Bank Bldg., Tuscaloosa, Ala., has contract for Buccaneer Gardens Apartments, $2,500,000.

CORPUS CHRISTI — State Highway Department, D. C. Greer, Hwy. Engr., let contract to Brown & Root, Inc., P. O. Box 1139, Austin, $140,000 for road work in Nueces County; Hwy. US 181.

CORPUS CHRISTI—Nueces County plans sanitorium at Waldron Field; plan bond election for $250,000 and apply for $100,000 in Federal aid, for new building, adjacent to Hilltop Sanatorium.

CROCKETT—Houston County Electric Cooperative has REA loan, $450,000 for 128 miles REA lines.

CRYSTAL CITY—Crystal City Independent School District approved $160,000 bond issue for gymnasium, cafeteria and remodeling of schools.

DALLAS—Southwide Realty Co., Dallas, let contract to McFaddin & Miller, 2900 Taylor St., Dallas, at $134,399 for one-story warehouse, Irving Blvd., to be leased to Southern Express, Inc.

DALLAS—City and Dallas County received low bid from T. C. Bateson Construction Co., 624 Irwin-Keasler Bldg., Dallas, at $683,600 for County Juvenile Detention Home and Administration Building, Harry Hines Blvd.

DALLAS—Preston Road Christian Church Congregation let contract to Miller and Norton, 4703 Ross, at $151,002, for unit C, educational building.

DALLAS — Wynnewood Development Co., 2311 Salerno, let contract to United Construction Co., Burt Bldg., Dallas, at $202,600, for building No. 1, of proposed shopping village, 2311 Salerno.

DALLAS — Republic National Bank plans $2,000,000 bank and office building, Pacific, Ervay and Bryan Sts.

DALLAS—Lone Star Gas Co., Jackson and Harwood Sts., received low bid from O'Rourke Construction Co., 1001 Commerce St., at $244,468, for office, warehouse and garage building, Mockingbird Lane.

DALLAS — City let contract to W. H. Nichols, 3015 Grand Ave., Dallas, $65,858 for Freeman and Cotton Belt Branch sanitary sewer from Browning Branch to Dam in rear of Tom Carlton Home on Devonshire. Contract No. 252.

DALLAS—City received low bid from City Construction Co., 2411 Inwood Rd., Dallas, $34,375 for sanitary sewers in Walnut Hill Joyce Way. Contract No. 253.

DALLAS—City received low bid from Cole Williams, Inc., Rt. 7, Box 427A, & W. G. Cullum & Co., Great National Life Bldg., both of Dallas, $42,340 for Bachman Creek Sanitary Sewers from Browning Branch to Walnut Hill Lane. Contract No. 251.

DALLAS—City let contract to City Construction Co., 2411 Inwood Road, Dallas, $109,397 for water mains and sanitary sewers in the first part of Ash Creek and Casa Linda addition. Contract No. 244.

DALLAS—I. & L. Development Co., 3336 Inwood Rd., will build apartment buildings, Hudnel and Vandell sts.; $140,000.

DALLAS—Kessler Park Methodist Church, Stewart and Windomere, received low bid from Joseph E. Morgan and Sons, 6010 Forest Pk. Rd., P. O. Box 6029, at $272,985, for chapel and educational building.

DALLAS—Dallas Office & Club Building, Inc., 1805 Elm St., let contract to Sebastian-Fulcher Air Conditioning Co., 900 Texas Bank Bldg., for remodeling structure, 1805 Elm and 205 N. St. Paul; $100,000.

DICKINSON—Galveston County Commissioners received low bid of $52,926 from Anchor Construction Co., 1811 Southgate Blvd., Houston, for Galveston County Agents' Bldg. Fred T. Stafford, 1929 Post Office St., Galveston.

DIMMITT COUNTY—Dan Harrison, Jr., let contract to J. C. Worcester, 603 American Hospital and Life Bldg., San Antonio, at $116,897, for ranch house.

EL PASO—El Paso Natural Gas Co., Paul Kayser, Pres., plans office building; $2,500,000.

FLOYDADA—Floyd County Rural Electric Cooperative has REA loan, $685,000 for 86 miles line.

FORT WORTH—District Engineer, Santa Fe Bldg., Galveston, plans 88 apartment units, Carswell Air Force Base; $1,774,000.

FORT WORTH—South Summit Church of Christ plans new building at corner Berry and Merida Ave.; cost approximately $150,000.

FORT WORTH—L. F. Corrigan let contract to M. F. Campbell for 3101 Camp Bowie Blvd.; $180,000.

FORT WORTH—City received low bid from Worth Construction Co., 328 E. Berry, $62,653 on bid No. 1 and $62,852 on bid No. 2 for paving of certain streets.

FRIONA—City let contract to Stockton Construction Co., 2508 Polk St., Amarillo, $57,458 for sewer improvements.

FRITCH—Sanford Independent School District let contract to S. T. West, Memphis, Texas, $38,221 for addition to Fritch School.

GAINESVILLE — City, T. S. Crawford, Mayor and Roy P. Wilson, Supt. of Schools, plans school for McMurray Elementary School; to cost approximately $185,000.

GALVESTON — Corps of Engineers had 5-mi. extension of Galveston Seawall projects approved by Budget Bureau, $3,000,000.

GALVESTON — Corps of Engineers, 606 Santa Fe Bldg., received low bid from Standard Dredging Corp., New York, $301,434, for dredging Galveston Channel.

GALVESTON AND CHAMBERS COUNTIES—Corps of Engineers, Galveston, let contract to Bauer-Smith Dredging Co., Port Lavaca, $524,460, for dredging Trinity River channel to Liberty, from Houston Ship Channel to mouth of Double Bayou.

GATESVILLE—City plans waterworks improvements, $180,000.

GATESVILLE — Gatesville Independent School District, L. C. McKamie, Supt., plans elementary school to cost approximately $320,000.

GRANBURY — Granbury Independent School District let contract for gymnasium, high school; Cadenhead and Son, 715 Isbell Road, Fort Worth, for gymnasium, $42,753; and remodeling school, $24,351.

GRAPEVINE—City plans water system improvements, $150,000 bond issue voted.

HONEYGROVE — Honeygrove Independent School District received low bid from George E. Turner, Honeygrove, $61,966 for gymnasium and athletic field.

HOUSTON—Harris County, H. L. Washburn, Asst., let contract to Holland Page, Austin, $104,840, for road work on Sheldon Deer Park Rd., No. 2760-1-2-4, from U. S. Hwy. 90 to Market St., 6.8 mi.

HOUSTON — Houston Independent School District received low bid from Claude K. Williams & Co., Inc., $198,800 for Lanier Junior High School.

HOUSTON — Houston Independent School District received low bid from Williams Construction Co., P. O. Box 9162, Houston, $174,668 for elementary school facilities.

HOUSTON—City plans 5,000 housing units, $20,000,000.

HOUSTON—City, Oscar Holcomb, Mayor, will revise plans and work out financial program for construction of Earthen dam on San Jacinto River, $7,500,000.

HOUSTON—Bert Wheeler & Assocs., plan $5,000,000 housing development on South Main.

HOUSTON — Woodridge Baptist Church, Rev. Reuben P. Ward, Pastor, plans new church at Winkler Dr. at Woodridge, $250,000.

HOUSTON — Missouri-Kansas-Texas Railroad announced $30,000,000 expansion program.

HOUSTON — Coral Club, 3637 Westheimer Ave., plans club building, $118,000.

HOUSTON—Produce Terminal, Inc., plans $2,000,000 produce terminal in area north of 3000 block of Washington Ave., near Southern Pacific Railroad.

HOUSTON — Goss Traverse Co., M & M Bldg., Lessee, plans records storage building, 2800 block Navigation Blvd., $500,000.

HOUSTON—University of Houston has gift of $3,500,000 to finance new power plant.

HOUSTON—North Main Baptist Church let contract to R. E. Nesmith, Inc., 4730 Canal St., for church 625 East 25th St., $100,000.

HOUSTON—Southern Oaks, Inc., has construction underway on residential and apartment project, in Southern Oaks Addition, $3,000,000.

HOUSTON — Katy Park Development Co., Tom C. Mabray, Vice-Pres., negotiating contract with O'Rourke Construction Co., 4011 Koehler St., Houston, for sky-scraper office building and terminal building, 20 stories, N. Main at Buffalo Bayou, opposite M & M Building, $50,000,000.

HOUSTON—LeRoy Melcher, M & M Bldg., let contract to J. A. Klinger for residence, Inverness and Timberland, River Oaks, $125,000.

HOUSTON — Houston Independent School District, let contract to Thomas Bryan & Associates, M & M Bldg., Houston, $760,498 for additions and repairs to Milby High School, 1601 Broadway Blvd.

HOUSTON — Congregation Beth Israel Synagogue let contract to Fisher Construction Co., 4711 Greeley, at $354,773, for addition and alterations to building, 1418 Holman St.

HOUSTON—Corps of Engineers, Galveston, let contract to Atlantic, Gulf & Pacific Co., 15 Park Row, New York, N. Y., $373,973, for dredging Houston Ship Channel from Greens

(Continued on page 54)

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HIGH LIFT BOOM

Southern Construction Projects

TEXAS

(Continued from page 52)

Bayou to Clinton, Harris County.

HOUSTON—Houston Independent School District let contract to Thomas Bate & Son, 1107 Girard St., Houston, $617,000 for addition and remodeling Jeff Davis High School.

HOUSTON—Strickland-Whipple Construction Co., Miles Strickland, Second National Bank Bldg., will build shopping center, Old Richmond Rd., Bellaire, $1,000,000. Owner builds.

HOUSTON — City let contract to W. P. Holland, 4388 Rosewood Drive, Houston, $138,790 for Heights Collection water lines.

HOUSTON—Harris County, H. L. Washburn, County Auditor, let contract to Gaylord Construction Co., 806 Blodgett St., $90,062, for 12th Street Bridge (No. 1842-1).

HOUSTON — Houston Independent School District let contract to Viking Construction Co., 2233 Commerce Bldg., Houston, $145,357 for site improvements at Burbank and Pershing Schools.

HOUSTON—Harris County let contract to Holland Page, Austin, $74,287, for asphalt paving on Stella Lind Rd., approximately 2.98 mi.

HOUSTON — City received low bid from Hartwell Construction Co., 633 Kernel St., Houston, $57,112 for storm sewer.

HOUSTON — City let contract to Layne-Texas Co., 5402 Lawndale Ave., Houston, $85,900 for drilling water wells Nos. 5 & 6 East End Pump Station.

HOUSTON—Harris County Water Control & Improvement District No. 11, 12761 Market Street Road, let contract to Brown Company, Inc., P. O. Box 74, Houston, $96,584 for additional water facilities.

HOUSTON—City let contract to Hartwell Construction Co., 633 Kernel St., Houston, $102,354 for water mains.

HOUSTON — Houston Independent School District let contract to Robert Bonifle Construction Co., 1402 Westheimer Rd., Houston, $98,849 for elementary school.

HUNTSVILLE — Weldon Patton, County Judge, received low bid of $265,998 from Temple & Sons, Lufkin, Tex., for Huntsville Memorial Hospital.

JASPER—Corps of Engineers, Galveston, received low bid from Sturman-Davis Construction Co., Houston, $274,000 for clearing approximately 2,740 acres in reservoir of Dam "B" in Neches River in Jasper County.

LONGVIEW—Milo J. Choate & Co., Tyler, Tex., awarded contract at $100,963, for Longview Masonic Temple Building.

LUBBOCK—City sold $2,474,000 for various purposes bond issue to First Southwest Co.

McGREGOR — McLennan County Electric Cooperative has REA loan, $335,000 for 160 miles line.

MERCEDES—Magic Valley Electric Cooperative has REA loan, $385,000 for 155 miles line.

MINEOLA—First Methodist Church Congregation plans sanctuary, and converting existing one to educational building; cost approximately $150,000.

PAMPA—City let contracts for waterworks equipment: U. S. Cast Iron Pipe Co., Praetorian Bldg., Dallas, for cast iron pipe and fittings, $83,201; Layne-Texas Co., 6419 Maple Drive, Dallas, for pump at $19,473; Park Owen Construction Co., Pampa, laying lines at $30,721.

PASADENA—City plans to vote soon upon $1,250,000 bond issue for water and sewer facilities.

PASADENA — City received low bid from Holbrook and Graves, Liberty, $86,524 for water and sewer lines.

PEARLAND—Pearland Independent School District let contract to Williams Construction Co., 2310 N. Wayside, Houston, for gymnasium, $100,000.

PERRYTON — City let contract to S. E. Lanier, Haskell, $126,740 for waterworks improvements and Sherman Machine & Iron Works, Inc., 26 E. Main St., Oklahoma City, Okla., $59,918 for sewer improvements.

PITTSBURG — Board of Education plans elementary school, $130,000.

RANKIN—Rankin Independent School District plans elementary school, $280,000.

RANKIN—Rankin Independent School District, Hamilton Hill, supt., plans gymnasium and band room, $120,000.

RAYMONDVILLE—Willacy County Navigation District let contract to Wedegartner Construction Co., Brownsville, $96,551, for harbor facilities for Port Mansfield on Red Fish Landing in Willacy County.

RICHARDSON — Richardson Independent School District let contract to Watson and Nelson, 3712 Fairfax, Dallas, $98,328 for school.

SAN ANTONIO—Texas National Hotel Association, W. L. Moody, Jr., Galveston, received low bid from Hill & Combs, 321 Melrose Pl., at $855,750, for Menger Hotel Addition, Alamo Plaza and Crockett Sts.

SAN ANTONIO—Alamo Heights Independent School District let contract to G. W. Mitchell, 612 American Hospital & Life Bldg., San Antonio, $776,000 for senior high school.

SAN BENITO—International Boundary & Water Commission, Cameron County Bldg., San Benito, let contract to Dodds & Wedegartner, 382 N. Bowie St., $129,701, for levee and river bank revetment at Rio Grande Bank protection project.

SEYMOUR—City, Mayor, received low bid from J. R. Fannin, 1712 13th St., Lubbock, $119,050, for street paving.

SMITHVILLE—City approved $300,000 bond issue for extension of water lines, new sewer system and sewage treatment plant and water system.

TERRELL—State Board of Control, Austin, received low bid from P. O'B. Montgomery, P. O. Box 925, Dallas at $1,247,000 for dormitories and related hospital facilities, Terrell State Hospital, Proj. Texas 64.

TYLER—B. N. Taylor, Manager, let contract $118,000 to Campbell & Kay, Chandler Hgwy, for construction of Youth Camp.

TYLER—City received low bid from J. C. Oliver, 2000 E. Erwin, Tyler, $125,582 for mechanical electrical and miscellaneous work at Raw Water Pumping Station.

VICTORIA—St. Mary's Parish received low bid from Paul DePine, Victoria, at $140,681 for parish hall.

WACO—Brazos River Transmission Electric Cooperative has $6,480,000 for purchase and installation of two 11,500 KW steam generating units in Oak Charter Plant near Belton, Tex.; and for 211 miles transmission lines and 11 new sub-stations; and general plant improvements; Tex. 121F Brazos.

WACO—City received low bid from Hoffman and Border, Waco, $165,785 for waterworks and water storage tank.

WICHITA FALLS—City and County plan $1,200,000 enlargement program for General Hospital.

VIRGINIA

AMHERST AND ROCKBRIDGE COUNTIES—Public Roads Administration, Arlington, let contract to Vacellio Construction Co., Roanoke, $74,290, for Proj. 1-F-3, Blue Ridge Parkway.

BEDFORD, ROCKBRIDGE AND BOTETOURT COUNTIES—Public Roads Administration, let contract to Robertson Henry Co., Huntington, W. Va., $360,062, for Blue Ridge Parkway.

BERRYVILLE — Clarke County School Board, Archie Robertson, Supt., plans consolidated high school, $600,000.

BLACKSBURG—Virginia Polytechnic Institute received low bid from McDevitt & Street Co., Builders Bldg., Charlotte, N. C., $185,300 for agricultural units.

BLACKSBURG—Virginia Polytechnic Institute let contract to R. H. Lowe, Inc., Roanoke, $116,754 for apparatus and piping for addition to power plant.

CHASE CITY—Mecklenburg Electric Cooperative has REA loan, $330,000 for 151 miles line.

CHESTERFIELD — Chesterfield County School Board let contract to E. L. Mumma, Chester, $63,433 for Union Grove School.

FORT MYER—U. S. Engineer Office let contract to Tuckman-Barbee, 1729 H St., S. W., Washington, D. C., at $78,444 for alterations.

HOPEWELL—Bord of Education let contract to Thorington Construction Co., Richmond, $353,962, for gymnasium, etc., High School and auditorium and gymnasium, Woodson School.

LYNCHBURG—Pendleton S. Clark, Krise Bldg., Archt., has plans in progress for apartment project; $800,000.

MONTEVIDEO—Board of Education received low bid from Castle Construction Co., Grottoes, $1,647,000 for Consolidated High School.

PETERSBURG — Virginia State College plans expenditure of $542,820 for new buildings.

PORTSMOUTH—City let contract for waterworks improvements as follows: general contract, F. L. Showalter, Inc., Lynchburg, $263,200; filter, Roberts Filter Mfg. Co., Darby, Pa., $195,830.

PORTSMOUTH—Navy Department received low bid from Vanguard Construction Corp., 3708 Westminster Ave., Norfolk, at $49,480 for miscellaneous crane track repairs.

RICHMOND—Medical College of Virginia let contract to A. F. Barnette, Mechanicsville, $888,820 for shop building

RICHMOND—City received low bid from Thorington Construction Co., 205 E. Canal St., Richmond, at $74,882 for Richmond Stadium.

RICHMOND—Henrico County sold $1,500,000 bond issue to Estabrook & Co. & Associates for school improvements.

RICHMOND—State Highway Department, let contracts for projects in following counties:

Carroll and Wythe—Proj. No. 2017-01, 2068-01-02; Adams & Tate Construction Co., 2725 Roanoke Ave., Norwich, $74,242;

Elizabeth City—Proj. No. S-254(1); T. E. Ritter Corp., 426 W. York, Norfolk, $286,128;

Nottoway—Proj. No. 1067-01-02; Garrett, Moon & Pool, Blackstone, $90,217;

Tazewell—Proj. No. 1002-01-02; F. L. Showalter, Allied Arts Bldg., Lynchburg, $65,110;

Halifax—Proj. No. U-36(5); Clyde R. Royals, Hampton, $28,446;

Roanoke—Proj. No. 1080-01; Ralph E. Mills Co., Inc., Salem;

City of Williamsburg—Proj. No. 2347-01, 2847-01; H. G. McCartney Co., Toano, $96,467;

Augusta—Proj. No. S-153(1); Adams & Tate Construction Co., 2725 Roanoke Ave., Norwich, $29,168;

Southhampton—Proj. No. S-257(1); W. H. Scott, Franklin, $76,069;

Appomattox—Proj. No. S-290(1) and S-288(1); Roy M. Homewood, Chapel Hill, $55,220.

RICHMOND — First Presbyterian Church Congregation approved new $245,000 Sanctuary at Lock Lane and Cary Street Rd.

RICHMOND—Richmond, Fredericksburg & Potomac Railroad Co., has authorization to issue $10,854,800 of capital stock by Interstate Commerce Commission.

STAUNTON—Board of Supervisors of Augusta County received low bids for the following waterworks projects; Contract No. 1, earthwork, Echols Brothers, Staunton, $39,520; Contract No. 2, structural steel, Carper and Perreyclear, 1532 High St., Richmond $10,-800; Contract No. 3, pipe work, Van Doren & Stancil, 2200 Maple Shade Lane, Richmond, $95,540.

WAYNESBORO—Board of Education let contract to Turner and Harper, Strasburg, $88,450 for Shenandoah Heights Elementary School.

WILLIAMSBURG—State Highway Department, received low bid from H. G. McCartney Co., Toano, $96,467, for 1.83 mi. widening on Richmond Rd., Rt. 60Z and 31.

WINCHESTER — Board of Education let contract to English Construction Co., Altavista, $877,740 for James Wood High School.

WEST VIRGINIA

CHARLESTON—State Roads Commission, received low bids for projects in following counties:

Boone — Proj. No. 3602, etc., Madison, Bandytown Rd.; Abbot Construction Co., Capitol & Piedmont Rd., $25,393;

Braxton—Proj. No. S-554(1), Gem-Heaters Rd.; Stickley Brothers, Inc., Keyser, $149,462;

Braxton—Proj. No. 3017-B, Napier-Lewis County Line; Abbot Construction Co., Capitol & Piedmont Rd., $21,553;

Calhoun — Proj. No. 3329, Grantsville-Annamoriah; Osborne Construction Co., Bridgeport, $23,169;

Gilmer — Proj. No. 3334, Glenville-Lewis County line; Feather Construction Corp., Morgantown, $23,288;

Jefferson—Proj. No. S-531(1), W. Va., 48 Shenandoah J.; Stonestreet & Nuzum, Fairmont, $28,504;

Ritchie—Proj. No. 3377, W. Va., 53 Smithville; Osborne Construction Co., Bridgeport, $34,595;

Tyler—Proj. No. S-577(1), Rt. 24/1 Sec. 6; Hillard Marcum, Verdunsville, $62,979;

Wetzel—Proj. No. 3771, Newdale-Marshall County line; Feather Construction Corp., Morgantown, $17,871.

Boone—F-288(1), Joe's Creek Rd.; Brown & Wright, Princeton, $162,253;

Jackson and Wood—Proj. No. 306(7), 2.036 mi. in Jackson and 1.575 mi. in Wood, Neptune-Belleville Rd.; Boso & Ritchie, Inc., Ravenswood, $225,901;

W. VA., CHARLESTON—State Road Commission, let contracts for projects in following counties:

Berkeley—Resurfacing work on 5.76 mi. of State Rt. 45 between Martinsburg and Jefferson County line; Potomac Construction Co., Martinsburg;

Clay—8.3 mi. surface treatment on State Rt. 16 from Bickmore to Belva; A. A. Bostin, Rupert;

Hampshire—6 mi. road mix surface, State Rt. 45 from 4 mi. north of U.S. Rt. 50 to Raw

(Continued on page 56)

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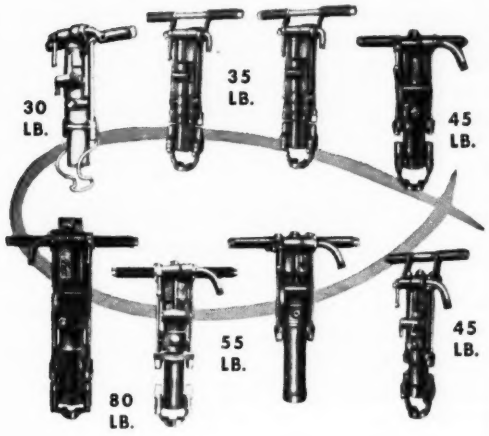
- Famous Thor light-weight short-travel tubular valve provides EXTRA POWER with minimum air consumption. Cushioned piston action, powerful blowing, strong rotation, automatic lubrication.



THOR SINKER SPECIFICATIONS			
CLASS	SIZE NO.	LENGTH	STD. CHUCK SIZE*
30 LB. Sinker	28	18-¼"	⅞" Hex. x 3¼" Col.
35 LB. Sinker	33	21-¾"	⅞" Hex. x 3¼" Col.
35 LB. Auger	139	21-¾"	⅞" Hex. x 3¼" Col.
45 LB. Sinker	38	20-¼"	⅞" Hex. x 3¼" Col.
45 LB. Auger	39	20-¼"	⅞" Hex. x 3¼" Col.
55 LB. Sinker	72	23-¾"	1" Round Lug
55 LB. Sinker	75	23-¾"	1" Hex. x 4¼" Col.
80 LB. Sinker	85B	29-⅛"	1" Hex. x 4¼" Col.

*Optional Chucks available in popular sizes. See Thor Catalog MC-1.

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This 50,000 pound Mobile Crane is a completely new member of the UNIT Crane and Shovel line. Designed for both "on and off" highway operation. So compact, it works efficiently even in small, cramped quarters, "in or out" of the yard.

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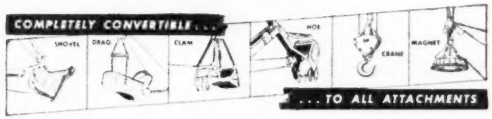
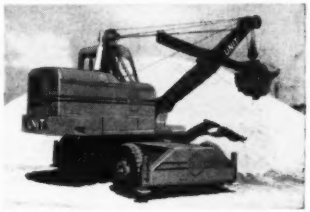


UNIT 357 MOBILE CRANE WITH ½ Yd. SHOVEL ATTACHMENT



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Dravo Appoints Morrison

Appointment of A. J. Morrison as manager of the shaft and tunnel department of Dravo Corporation's Contracting Division, Pittsburgh, Pa., has been announced. Mr. Morrison, who was graduated with a civil engineering degree from the University of Cincinnati in 1917, started with Dravo immediately after his graduation. He served with the Army Engineers during the first World War and returned to Dravo in 1920. Mr. Morrison engineered various tunnel and shaft construction projects throughout the country.

Profit Through Earth-Moving

On the many earthmoving jobs throughout the country contractors are looking toward equipment that will produce for profit. Caterpillar Tractor Co., Peoria 8, Ill., has stressed this theme in a new 16-page booklet "Profiting Through Earthmoving—the 'Caterpillar' Way." (Form 12108.)

Illustrated with applications and job studies of "Caterpillar" bulldozers, scrapers, wagons, motor graders and allied equipment, this brochure brings to the reader, performance data relative to levee construction, railway maintenance, back filling, land clearing, foundation work, highway and dam construction, stripping and quarry work, proven methods of irrigation ditching, snow removal and oil mixing for surfacing roadbeds.

The various adaptations of Caterpillar equipment to this field through intensive development of a packaged fleet of earthmoving tools offers readers of this publication an overall view of the company's specialized products.

Wooldridge TC-142 Scraper

Following extensive job-testing of pilot models, Wooldridge Manufacturing Co. of Sunnyvale, Calif., is now making deliveries of the new model TC-142 tractor-drawn-scraper, specifically designed to stand up under roughest operating conditions and withstand the heavier stresses imposed by today's more powerful tractors. Modern alloyed steel construction minimizes welding and increases structural strength. Capacities are 14.2 cu. yds. struck, 17.5 heaped.

Comparative tests show faster loading characteristics than previous models as a result of new 3-piece cutting edge. Wider 45-inch front apron opening and newly designed curved bowl ejector have been added to achieve faster complete discharge of load. High yoke and ground clearance have been achieved, together with low center of gravity, short wheel base, and equalized weight distribution, to permit increased stability and maneuverability over all types of terrain.

Basic Wooldridge design features have been maintained, including pivot-tilt forced ejection, rear-draft fulcrum leverage, bailing bowl loading, and replaceable side cutter blades. Cable is easily accessible and is reeved in simple straight lines over a minimum number of sheaves located away from load for maximum cable life.

Overall height with blade on ground is 10'9"; overall width, 11'6"; overall length, with pusher, 35'2"; wheelbase, 21'; internal bowl width, 10'; blade clearance and depth of spread, with four 21.00 x 24 tires, 16"; optional alternate tire arrangements with six 18.00 x 24 tires or two 21.00 x 24 tires front and two 24.00 x 29 tires rear; approximate weight, 28,400 lbs.

Concrete Form Catalog

Universal Form Clamp Co., of Chicago, Ill., has announced that its new catalog on the Uni-Form system of forming concrete is now available. Illustrated, the material, and labor saving features of the system, the new 32 page catalog describes both the forms and their accessories. Completely assembled and ready for use when they reach the job, Uni-Forms are constructed of rigid, steel frames and steel protector strips which contain the plywood, insuring maximum re-usage.

Modular in design, the forms are light in weight, 2 feet wide, and obtainable in variable heights. The plywood face provides nailing surfaces. Used with Uni-Forms are the Uni-Form tie, tie key, and liner clamp. Providing easy assembly, the tie is made for all wall sizes and is capable of withstanding a 3,000 pound working load. The tie ends are flush with the backs of forms with no tie projections. Affording maximum safety and stamped for easy identification, the Uni-Form tie is the only positive form tie and spreader. Used with the Uni-Form Tie is the tie key. It is wedged shaped with the flat ends that are easily inserted, removed, and reusable, and securely lock the forms and ties. The liner clamp, designed to save lumber, nails, and labor, is hooked into holes provided in the form's frame. Alignment is secured by inserting a wedge between aligning lumber and the liner clamp. One nail holds the wedge in position. The liners are lapped and require no cutting or fitting.

"Power for Peak Production" Described in Pamphlet

A pictorial review of the applications of International diesel and carburetor-type power units in the rock products industry, is presented in a new two-color pamphlet issued by the industrial power division of International Harvester Co.

Job reports in graphic news style feature photographs of typical installations, with cost and performance details given in brief captions. Various models in the company's line of power units are shown operating pumps, crushers, compressors, conveyors, generators and shakers. An instant guide to the work capacity of 10 units is provided in a convenient chart. Maximum working horsepower—from 24 to 180—and the size compressor, crusher or generator each model will power, are listed in tabular form.

Euclid Names Phillips

R. Q. Armington, vice president and general manager of Euclid Road Machinery Co., Cleveland, Ohio, has announced the appointment of R. W. Phillips as special representative in charge of government contacts in Washington, D. C. and other offices throughout the country. Mr. Phillips has been purchasing agent for Euclid since 1934. The position will be filled by J. B. Law, who has been production manager for 16 years. R. J. Lenz, who has been sales office manager is now production control manager.

A. C. Service Manual

A new service manual covering the operation, maintenance and major repair of the AD-3 and AD-4 Motor Graders has just been released by the tractor division of Allis-Chalmers Manufacturing Co., Milwaukee, Wisc. The 278-page book features 26 sections ranging from descriptions and specifications to fits and tolerances.

Sections I thru IV contain a description of the graders, and illustrated information and instructions on operation and preventive maintenance. For example, among the 11 "checks" listed for engine starting, is how to inspect fuel pressure. "The fuel pressure indicated on the gage, with the engine operating at fuel governed speed, should be between 25 and 60 pounds."

Sections V thru XXIV provide detailed descriptions of the various assemblies of the graders and instructions for the proper adjustment and repair or rebuilding of these assemblies. A few suggestions on the adjustment of throttle linkage reads as follows: "Set the throttle control lever in the 13th notch from upper end of lever quadrant. The rod leading down from the lever is connected to a bellcrank below the driver's platform." Line-drawn illustrations supplement this description of the throttle linkage which provide mechanics with complete instructions on how to repair and maintain these parts.

Section XXV features the proper fits and tolerance of various assemblies for grader maintenance. The information deals with fit and tolerance of parts when they are new, and the amount of wear permissible before the part must be replaced.

A liberal supply of line drawings, cutaway views, exploded-part views and nomenclature studded halftones simplify the contents and make instructions easily understood. Every effort has been made to help servicemen accomplish efficient repair and maintenance so the A-C graders will maintain the original quality built into them.

Copies of the new service manual can be purchased at the list price of $4.00 per copy from Allis-Chalmers Industrial Dealers, or the Allis-Chalmers Manufacturing Co., Tractor Division Service Department, Box 512, Milwaukee 1, Wisc.

Concrete Bucket, Transporter for Self-Raising Tower

Jaeger Machine Co., Columbus 16, Ohio, announces two new accessories for its self-raising hoist tower for building and roofing contractors.

Completely interchangeable with the 5'6" by 5'6" material platform which has always been standard equipment for the tower, is a new ½-cubic yard concrete bucket which fits on the same frame and can be easily adapted to towers now in service. The bucket is roll-over type and will hold the full load of an 11-S concrete mixer.

It descends to a low level to permit loading directly from concrete mixers at ground level, or from truck mixers. Bucket discharge is automatic, and discharging levels may be regulated in 3-inch increments at any point from 10 feet above ground to within 5'6" of the top of the tower. The standard tower height is 37'; extensions increase it to 67'. A positive-acting safety device prevents material platform or concrete bucket falling

Thor Pneumatic Hammer

Independent Pneumatic Tool Co., of Aurora, Ill., manufacturers of Thor portable power tools, has announced a new pneumatic body and fender hammer.

The new hammer's features include ball swivel action on both upper and lower dollies that always aligns perfectly, push button "on-off" air control that works like an electric switch, an independent needle valve with knurled nut control that regulates speed and power of the hammer from dead stop to full power, sensitive ratchet control that guides the hammer to exact clamping position, positive ratchet lock which is set or released by a flip of the finger and holds the hammer firmly locked in position, and a rigid yoke locking device which permits quick changes and prevents wear and loose-fitting yokes. The Thor automotive tool is equipped with yokes and associated accessories for repairing all types of turret tops, hoods, bodies, doors and fenders.

West Virginia Projects

(Continued from page 54)

Raw; Potomac Construction Co.;

Logan—6 mi. surface treatment U.S. Rt. 119 between Blair and Ethel; John S. Gillispie, Huntington;

McDowell—surface treatment, U.S. Rt. 52 from Johnny Cake to Roderfield; Adams & Tate Construction Co., Roanoke, $31,113;

Mingo—5.58 mi. surface treatment on U.S. Rt. 52 from Gilbert to Wyoming County line; John S. Gillispie, Huntington;

Putnam—5.68 mi. surface treatment on U.S. Rt. 35 from Plymouth to Eleanor; L. C. Hanna, Charleston;

Raleigh—6.181 mi. surface treatment on State Rt. 41 and U.S. Rt. 19 between Stanaford and Prince Bridge; A. A. Bostic;

Wyoming—12.755 mi. surface treatment on State Rt. 10 from Elwore to Mercer County line; Adams & Tate Construction Co., Roanoke.

New T. V. A. Power Plant

(Continued from page 42)

1952, the sales to industrial plants using large blocks of power are estimated to increase by about 500,000,000 kilowatt-hours over the 3,900,000,000 kilowatt-hours purchased during the last year of the war.

Total 1945 use of electricity in the T. V. A. area, including transmission losses and energy returned to the Aluminum Company for power generated at its dams, approximated 11,500,000,000 kilowatt-hours. Government estimates of the 1952 consumption read "the region now served will need an additional 8,000,000,000 kilowatt-hours, chiefly to meet the demands of the 144 municipal and cooperative systems and their 900,000 consumers."

The system's hydro generating capacity is being raised by about 40 per cent by installations under way at Tennessee Valley Authority dams and at three dams being built by the Corps of Engineers in the Cumberland River basin. Combined with seasonal secondary hydro-power, power from the New Johnsonville operation will add 3,000,000,000 kilowatt-hours a year to the dry-year output of the T. V. A. system.

The present T. V. A. system has about 450,000 kilowatts of steam generating capacity. The Wilson plant was taken over in 1933. Several steam plants were purchased from private utilities in 1933. Construction was started in 1940 on the Watts Bar steam plant. This now has an installed capacity of 240,000 kilowatts. When T. V. A. was created in 1933, about one-third of the generating capacity of the region was in steam plants. "Due to rapid construction of hydro plants, only partially offset by new steam capacity," Authority officials observe, "the proportion has dropped at the present time to one sixth."

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Ruggedly built from the tougher steels, CLEVELANDS stand up under the roughest going, minimizing major repairs, and when field repairs are necessary they are quickly and easily made because of unit-type construction. A wide range of speed combinations, extreme maneuverability and abundant, smooth-flowing power assure maximum trench yardage in any given period. Contact your local CLEVELAND dealer for other CLEVELAND features.

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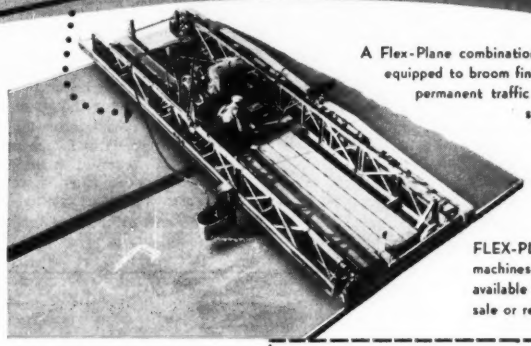

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FLEX-PLANE machines are available for sale or rental.

COMBINATION MACHINE:
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*Name*_____
*Company*_____
*Address*_____
_____

Mail to FLEX-PLANE, Warren, Ohio

Southern Construction Projects

TEXAS

(Continued from page 52)

Bayou to Clinton, Harris County.

HOUSTON—Houston Independent School District let contract to Thomas Bate & Son, 1107 Girard St., Houston, $617,000 for addition and remodeling Jeff Davis High School.

HOUSTON—Strickland-Whipple Construction Co., Miles Strickland, Second National Bank Bldg., will build shopping center, Old Richmond Rd., Bellaire, $1,000,000. Owner builds.

HOUSTON — City let contract to W. P. Holland, 4388 Rosewood Drive, Houston, $138,780 for Heights Collection water lines.

HOUSTON—Harris County, H. L. Washburn, County Auditor, let contract to Gaylord Construction Co., 806 Blodgett St., $90,062, for 12th Street Bridge (No. 1842-1).

HOUSTON — Houston Independent School District let contract to Viking Construction Co., 2233 Commerce Bldg., Houston, $143,957 for site improvements at Burbank and Pershing Schools.

HOUSTON—Harris County let contract to Holland Page, Austin, $74,287, for asphalt paving on Stella Lind Rd., approximately 2.98 mi.

HOUSTON — City received low bid from Hartwell Construction Co., 653 Kernel St., Houston, $57,112 for storm sewer.

HOUSTON — City let contract to Layne-Texas Co., 5402 Lawndale Ave., Houston, $85,800 for drilling water wells Nos. 5 & 6 East End Pump Station.

HOUSTON—Harris County Water Control & Improvement District No. 11, 12761 Market Street Road, let contract to Brown Company, Inc., P. O. Box 74, Houston, $96,584 for additional water facilities.

HOUSTON—City let contract to Hartwell Construction Co., 653 Kernel St., Houston, $102,354 for water mains.

HOUSTON — Houston Independent School District let contract to Robert Bouiffie Construction Co., 1402 Westheimer Rd., Houston, $98,849 for elementary school.

HUNTSVILLE — Weldon Patton, County Judge, received low bid of $205,998 from Temple & Sons, Lufkin, Tex., for Huntsville Memorial Hospital.

JASPER—Corps of Engineers, Galveston, received low bid from Sturman-Davis Construction Co., Houston, $274,000 for clearing approximately 2,740 acres in reservoir of Dam "B" in Neches River in Jasper County.

LONGVIEW—Milo J. Choate & Co., Tyler, Tex., awarded contract at $100,963, for Longview Masonic Temple Building.

LUBBOCK—City sold $2,474,000 for various purposes bond issue to First Southwest Co.

McGREGOR — McLennan County Electric Cooperative has REA loan, $335,000 for 160 miles line.

MERCEDES—Magic Valley Electric Cooperative has REA loan, $385,000 for 155 miles line.

MINEOLA—First Methodist Church Congregation plans sanctuary, and converting existing one to educational building; cost approximately $150,000.

PAMPA—City let contracts for waterworks equipment; U. S. Cast Iron Pipe Co., Praetorian Bldg., Dallas, for cast iron pipe and fittings, $83,201; Layne-Texas Co., 6419 Maple Drive, Dallas, for pump at $19,473; Park Owen Construction Co., Pampa, laying lines at $30,721.

PASADENA—City plans to vote soon upon $1,250,000 bond issue for water and sewer facilities.

PASADENA — City received low bid from Holbrook and Graves, Liberty, $96,524 for water and sewer lines.

PEARLAND—Pearland Independent School District let contract to Williams Construction Co., 2310 N. Wayside, Houston, for gymnasium, $160,000.

PERRYTON — City let contract to S. E. Lanier, Haskell, $126,740 for waterworks improvements and Sherman Machine & Iron Works, Inc., 26 E. Main St., Oklahoma City, Okla., $59,918 for sewer improvements.

PITTSBURG — Board of Education plans elementary school, $130,000.

RANKIN—Rankin Independent School District plans elementary school, $280,000.

RANKIN—Rankin Independent School District, Hamilton Hill, Supt., plans gymnasium and band room, $120,000.

RAYMONDVILLE—Willacy County Navigation District let contract to Wedegartner Construction Co., Brownsville, $96,551, for harbor facilities for Port Mansfield on Red Fish Landing in Willacy County.

RICHARDSON — Richardson Independent School District let contract to Watson and Nelson, 3712 Fairfax, Dallas, $98,328 for school.

SAN ANTONIO—Texas National Hotel Association, W. L. Moody, Jr., Galveston, received low bid from Hill & Combs, 321 Melrose Pl., at $855,730, for Menger Hotel Addition, Alamo Plaza and Crockett Sts.

SAN ANTONIO—Alamo Heights Independent School District let contract to G. W. Mitchell, 612 American Hospital & Life Bldg., San Antonio, $776,000 for senior high school.

SAN BENITO—International Boundary & Water Commission, Cameron County Bldg., San Benito, let contract to Dodds & Wedegartner, 382 N. Bowie St., $129,701, for levee and river bank revetment at Rio Grande Bank protection project.

SEYMOUR—City, Mayor, received low bid from J. R. Fannin, 1712 13th St., Lubbock, $119,050, for street paving.

SMITHVILLE—City approved $300,000 bond issue for extension of water lines, new sewer system and sewage treatment plant and water system.

TERRELL—State Board of Control, Austin, received low bid from P. O'B. Montgomery, P. O. Box 923, Dallas at $1,247,000 for dormitories and related hospital facilities, Terrell State Hospital, Proj. Texas 64.

TYLER—B. N. Taylor, Manager, let contract $118,000 to Campbell & Kay, Chandler Hgwy. for construction of Youth Camp.

TYLER—City received low bid from J. C. Oliver, 2000 E. Erwin, Tyler, $125,582 for mechanical electrical and miscellaneous work at Raw Water Pumping Station.

VICTORIA—St. Mary's Parish received low bid from Paul DePine, Victoria, at $140,681 for parish hall.

WACO—Brazos River Transmission Electric Cooperative has $6,480,000 for purchase and installation of two 11,500 KW steam generating units in Oak Charter Plant near Belton, Tex.; and for 211 miles transmission lines and 11 new sub-stations; and general plant improvements; Tex. 121F Brazos.

WACO—City received low bid from Hoffman and Border, Waco, $163,785 for waterworks and water storage tank.

WICHITA FALLS—City and County plan $1,200,000 enlargement program for General Hospital.

VIRGINIA

AMHERST AND ROCKBRIDGE COUNTIES—Public Roads Administration, Arlington, let contract to Vacellio Construction Co., Roanoke, $74,200, for Proj. 1-F-3, Blue Ridge Parkway.

BEDFORD, ROCKBRIDGE AND BOTETOURT COUNTIES—Public Roads Administration, let contract to Robertson-Henry Co., Huntington, W. Va., $360,902, for Blue Ridge Parkway.

BERRYVILLE — Clarke County School Board, Archie Robertson, Supt., plans consolidated high school, $400,000.

BLACKSBURG—Virginia Polytechnic Institute received low bid from McDevitt & Street Co., Builders Bldg., Charlotte, N. C., $485,300 for agricultural units.

BLACKSBURG—Virginia Polytechnic Institute let contract to R. H. Lowe, Inc., Roanoke, $116,754 for apparatus and piping for addition to power plant.

CHASE CITY—Mecklenburg Electric Cooperative has REA loan, $330,000 for 151 miles line.

CHESTERFIELD — Chesterfield County School Board let contract to E. L. Mumma, Chester, $83,433 for Union Grove School.

FORT MYER—U. S. Engineer Office, let contract to Tuckman-Barbee, 1720 H St., S. W., Washington, D. C., at $78,444 for alterations.

HOPEWELL—Bord of Education let contract to Thorington Construction Co., Richmond, $351,382, for gymnasium, etc., High School and auditorium and gymnasium, Woodson School.

LYNCHBURG—Pendleton S. Clark, Krise Bldg., Archt., has plans in progress for apartment project; $800,000.

MONTEVIDEO—Board of Education received low bid from Castle Construction Co., Grottoes, $1,647,000 for Consolidated High School.

PETERSBURG — Virginia State College plans expenditure of $542,820 for new buildings.

PORTSMOUTH—City let contract for waterworks improvements as follows: general contract, F. L. Showalter, Inc., Lynchburg, $263,200; filter, Roberts Filter Mfg. Co., Darby, Pa., $196,830.

PORTSMOUTH—Navy Department received low bid from Vanguard Construction Corp., 3508 Westminster Ave., Norfolk, at $49,480 for miscellaneous crane track repairs.

RICHMOND—Medical College of Virginia let contract to A. F. Barnette, Mechanicsville, $88,820 for shop building.

RICHMOND—City received low bid from Thorington Construction Co., 205 E. Canal St., Richmond, at $74,882 for Richmond Stadium.

RICHMOND—Henrico County sold $1,500,000 bond issue to Estabrook & Co. & Associates for school improvements.

RICHMOND—State Highway Department, let contracts for projects in following counties:

Carroll and Wythe—Proj. No. 2017-01, 2098-01-02; Adams & Tate Construction Co., 2725 Roanoke Ave., Norwich, $74,242;

Elizabeth City—Proj. No. S-254(1); T. E. Ritter Corp., 426 W. York, Norfolk, $286,128;

Nottoway—Proj. No. 1967-01-02; Garrett. Moon & Pool, Blackstone, $90,217;

Tazewell — Proj. No. 1992-01-02; F. L. Showalter, Allied Arts Bldg., Lynchburg, $65,110;

Halifax—Proj. No. U-30(5); Clyde R. Royals, Hampton, $28,446;

Roanoke—Proj. No. 1680-01; Ralph E. Mills Co., Inc., Salem;

City of Williamsburg—Proj. No. 2347-01, 2847-01; H. G. McCartney Co., Toano, $96,467;

Augusta—Proj. No. S-153(1); Adams & Tate Construction Co., 2725 Roanoke Ave., Norwich, $29,108;

Southhampton—Proj. No. S-257(1); W. H Scott, Franklin, $76,069;

Appomattox—Proj. No. S-290(1) and S-288 (1); Roy M. Homewood, Chapel Hill, $55,220.

RICHMOND — First Presbyterian Church Congregation approved new $245,000 Sanctuary at Lock Lane and Cary Street Rd.

RICHMOND—Richmond, Fredericksburg & Potomac Railroad Co., has authorization to issue $10,834,800 of capital stock by Interstate Commerce Commission.

STAUNTON—Board of Supervisors of Augusta County received low bids for the following waterworks projects; Contract No. 1, earthwork, Echols Brothers, Staunton, $59,520; Contract No. 2, structural steel, Carper and Perreyclear, 1532 High St., Richmond $10,800; Contract No. 3, pipe work, Van Doren & Stancil, 2200 Maple Shade Lane, Richmond, $95,540.

WAYNESBORO—Board of Education let contract to Turner and Harper, Strasburg, $88,450 for Shenandoah Heights Elementary School.

WILLIAMSBURG—State Highway Department, received low bid from H. G. McCartney Co., Toano, $96,467, for 1.85 mi. widening on Richmond Rd., Rt. 60Z and 31.

WINCHESTER — Board of Education let contract to English Construction Co., Altavista, $877,740 for James Wood High School.

WEST VIRGINIA

CHARLESTON—State Roads Commission, received low bids for projects in following counties:

Boone — Proj. No. 3602, etc., Madison, Bandytown Rd.; Abbot Construction Co., Captiol & Piedmont Rd., $25,393;

Braxton—Proj. No. S-554(1), Gem-Heaters Rd.; Stickley Brothers, Inc., Keyser, $149,492;

Fayette—Proj. No. 3017-B, Napier-Lewis County Line; Abbot Construction Co., Capitol & Piedmont Rd., $21,553;

Calhoun — Proj. No. 3329, Grantsville-Annamoriah; Osborne Construction Co., Bridgeport, $23,169;

Gilmer — Proj. No. 3334, Glenville-Lewis County line; Feather Construction Corp., Morgantown, $23,298;

Jefferson—Proj. No. S-531(1), W. Va., 48 Shennandoah J.; Stonestreet & Nuzum, Fairmont, $28,504;

Ritchie—Proj. No. 3377, W. Va., 53 Smithville; Osborne Construction Co., Bridgeport, $34,566;

Tyler—Proj. No. S-577(1), Rt. 24/1 Sec. 6; Hillard Marcum, Verdunsville, $62,979;

Wetzel—Proj. No. 3771, Newdale-Marshall County line; Feather Construction Corp., Morgantown, $17,871.

Boone—F-288(1), Joe's Creek Rd.; Brown & Wright, Princeton, $162,253;

Jackson and Wood—Proj. No. 306(7), 2.036 mi. in Jackson and 1.575 mi. in Wood, Neptune-Belleville Rd.; Boso & Ritchie, Inc., Ravenswood, $225,901;

W. VA., CHARLESTON—State Road Commission, let contracts for projects in following counties:

Berkeley—Resurfacing work on 5.76 mi. of State Rt. 45 between Martinsburg and Jefferson County line; Potomac Construction Co., Martinsburg;

Clay—8.3 mi. surface treatment on State Rt. 16 from Blekmore to Belva; A. A. Bostin, Rupert;

Hampshire—6 mi. road mix surface, State Rt. 45 from 4 mi. north of U.S. Rt. 50 to Raw

(Continued on page 56)

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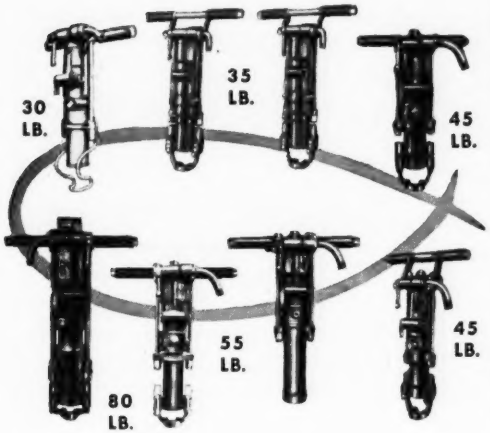

THOR SINKER SPECIFICATIONS			
CLASS	SIZE NO.	LENGTH	STD. CHUCK SIZE*
30 LB. Sinker	28	18-¼"	⅞" Hex. x 3¼" Col.
35 LB. Sinker	33	21-¾"	⅞" Hex. x 3¼" Col.
35 LB. Auger	139	21-¾"	⅞" Hex. x 3¼" Col.
45 LB. Sinker	38	20-¼"	⅞" Hex. x 3¼" Col.
45 LB. Auger	39	20-¼"	⅞" Hex. x 3¼" Col.
55 LB. Sinker	72	23-¾"	1" Round Lug
55 LB. Sinker	75	23-¾"	1" Hex. x 4¼" Col.
80 LB. Sinker	85B	29-⅛"	1" Hex. x 4¼" Col.

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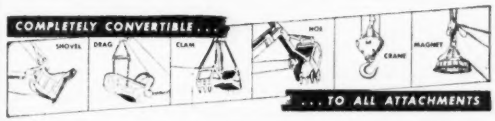
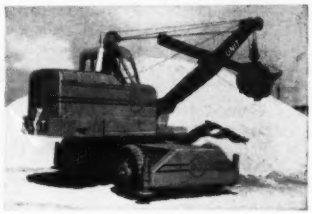


UNIT 357 MOBILE CRANE WITH ½ Yd. SHOVEL ATTACHMENT



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Dravo Appoints Morrison

Appointment of A. J. Morrison as manager of the shaft and tunnel department of Dravo Corporation's Contracting Division, Pittsburgh, Pa., has been announced. Mr. Morrison, who was graduated with a civil engineering degree from the University of Cincinnati in 1917, started with Dravo immediately after his graduation. He served with the Army Engineers during the first World War and returned to Dravo in 1920. Mr. Morrison engineered various tunnel and shaft construction projects throughout the country.

Profit Through Earth-Moving

On the many earthmoving jobs throughout the country contractors are looking toward equipment that will produce for profit. Caterpillar Tractor Co., Peoria 8, Ill., has stressed this theme in a new 16-page booklet "Profiting Through Earthmoving—the 'Caterpillar' Way." (Form 12108.)

Illustrated with applications and job studies of "Caterpillar" bulldozers, scrapers, wagons, motor graders and allied equipment, this brochure brings to the reader, performance data relative to levee construction, railway maintenance, back filling, land clearing, foundation work, highway and dam construction, stripping and quarry work, proven methods of irrigation ditching, snow removal and oil mixing for surfacing roadbeds.

The various adaptations of Caterpillar equipment to this field through intensive development of a packaged fleet of earthmoving tools offers readers of this publication an overall view of the company's specialized products.

Wooldridge TC-142 Scraper

Following extensive job-testing of pilot models, Wooldridge Manufacturing Co. of Sunnyvale, Calif., is now making deliveries of the new model TC-142 tractor-drawn-scraper, specifically designed to stand up under roughest operating conditions and withstand the heavier stresses imposed by today's more powerful tractors. Modern formed steel construction minimizes welding and increases structural strength. Capacities are 14.2 cu. yds. struck, 17.5 heaped.

Comparative tests show faster loading characteristics than previous models as a result of new 3-piece cutting edge. Wider 65-inch front apron opening and newly designed curved bowl ejector have been added to achieve faster complete discharge of load. High yoke and ground clearance have been achieved, together with low center of gravity, short wheel base, and equalized weight distribution, to permit increased stability and maneuverability over all types of terrain.

Basic Wooldridge design features have been maintained, including pivot-tilt forced ejection, rear-draft fulcrum leverage, bolting bowl loading, and replaceable side cutter blades. Cable is easily accessible and is reeved in simple straight lines over a minimum number of sheaves located away from load for maximum cable life.

Overall height with blade on ground is 10' 9"; overall width, 11' 6"; overall length, with pusher, 35' 2"; wheelbase 21'; internal bowl width, 10'; blade clearance and depth of spread, with four 21:00 x 24 tires, 16"; optional alternate tire arrangements with six 18:00 x 24 tires or two 21:00 x 24 tires front and two 24:00 x 29 tires rear; approximate weight, 28,400 lbs.

Concrete Form Catalog

Universal Form Clamp Co., of Chicago, Ill., has announced that its new catalog on the Uni-Form system of forming concrete is now available. Illustrated, the material, and labor saving features of the system, the new 32-page catalog describes both the forms and their accessories. Completely assembled and ready for use when they reach the job, Uni-Forms are constructed of rigid, steel frames and steel protector strips which contain the plywood, insuring maximum re-usage.

Modular in design, the forms are light in weight, 2 feet wide, and obtainable in variable heights. The plywood face provides nailing surfaces. Used with Uni-Forms are the Uni-Form tie, tie key, and liner clamp. Providing easy assembly, the tie is made for all wall sizes and is capable of withstanding a 3,000-pound working load the tie ends are flush with the backs of forms with no tie projections. Affording maximum safety and stamped for easy identification, the Uni-Form tie is the only positive form tie and spreader. Used with the Uni-Form Tie is the tie key. It is wedged shaped with the flat ends that are easily inserted, removed, and reusable, and securely lock the forms and ties. The liner clamp, designed to save lumber, nails, and labor, is hooked into holes provided in the form's frame. Alignment is secured by inserting a wedge between aligning lumber and the liner clamp. One nail holds the wedge in position. The liners are lapped and require no cutting or fitting.

"Power for Peak Production" Described in Pamphlet

A pictorial review of the applications of International diesel and carburetor-type power units in the rock products industry, is presented in a new two-color pamphlet issued by the industrial power division of International Harvester Co.

Job reports in graphic news style feature photographs of typical installations, with cost and performance details given in brief captions. Various models in the company's line of power units are shown operating pumps, crushers, compressors, conveyors, generators and shakers. An instant guide to the work capacity of 10 units is provided in a convenient chart. Maximum working horsepower—from 24 to 180—and the size compressor, crusher or generator each model will power, are listed in tabular form.

Euclid Names Phillips

R. Q. Armington, vice president and general manager of Euclid Road Machinery Co., Cleveland, Ohio, has announced the appointment of R. W. Phillips as special representative in charge of government contacts in Washington, D. C. and other offices throughout the country. Mr. Phillips has been purchasing agent for Euclid since 1934. The position will be filled by J. B. Law, who has been production manager for 16 years. R. J. Lenz, who has been sales office manager is now production control manager.

A. C. Service Manual

A new service manual covering the operation, maintenance and major repair of the AD-3 and AD-4 Motor Graders has just been released by the tractor division of Allis-Chalmers Manufacturing Co., Milwaukee, Wisc. The 278-page book features 26 sections ranging from descriptions and specifications to fits and tolerances.

Sections I thru IV contain a description of the graders, and illustrated information and instructions on operation and preventive maintenance. For example, among the 11 "checks" listed for engine starting, is how to inspect fuel pressure. "The fuel pressure indicated on the gauge, with the engine operating at fuel governed speed, should be between 25 and 60 pounds."

Sections V thru XXIV provide detailed descriptions of the various assemblies of the graders and instructions for the proper adjustment and repair or rebuilding of these assemblies. A few suggestions on the adjustment of throttle linkage reads as follows: "Set the throttle control lever in the 13th notch from upper end of lever quadrant. The rod leading down from the lever is connected to a bellcrank below the driver's platform." Line-drawn illustrations supplement this description of the throttle linkage which provide mechanics with complete instructions on how to repair and maintain these parts.

Section XXV features the proper fits and tolerance of various assemblies for grader maintenance. The information deals with fit and tolerance of parts when they are new, and the amount of wear permissible before the part must be replaced.

A liberal use of line drawings, cutaway views, exploded-part views and nomenclature studded halftones simplify the contents and make instructions easily understood. Every effort has been made to help servicemen accomplish efficient repair and maintenance so the A-C graders will maintain the original quality built into them.

Copies of the new service manual can be purchased at the list price of $1.00 per copy from Allis-Chalmers Industrial Dealers, or the Allis-Chalmers Manufacturing Co., Tractor Division Service Department, Box 512, Milwaukee 1, Wisc.

Concrete Bucket, Transporter for Self-Raising Tower

Jaeger Machine Co., Columbus 16, Ohio, announces two new accessories for its self-raising hoist tower for building and roofing contractors.

Completely interchangeable with the 5'6" by 5'9" material platform which has always been standard equipment for the tower, is a new ½-cubic-yard concrete bucket which fits on the same frame and can be easily adapted to towers now in service. The bucket is roll-over type and will hold the full load of an 11-S concrete mixer.

It descends to a low level to permit loading directly from concrete mixers at ground level, or from truck mixers. Bucket discharge is automatic, and discharging levels may be regulated in 3-inch increments at any point from 10 feet above ground to within 5'6" of the top of the tower. The standard tower height is 37'; extensions increase it to 67'. A positive-acting safety device prevents material platform or concrete bucket falling.

Thor Pneumatic Hammer

Independent Pneumatic Tool Co., of Aurora, Ill., manufacturers of Thor portable power tools, has announced a new pneumatic body and fender hammer.

The new hammer's features include ball swivel action on both upper and lower dollies that always aligns perfectly, push button "on-off" air control that works like an electric switch, an independent needle valve with knurled nut control that regulates speed and power of the hammer from dead stop to full power, sensitive ratchet control that guides the hammer to exact clamping position, positive ratchet lock which is set or released by a flip of the finger and holds the hammer firmly locked in position, and a rigid yoke locking device which permits quick changes and prevents wear and loose-fitting yokes. The Thor automotive tool is equipped with yokes and associated accessories for repairing all types of turret tops, hoods, bodies, doors and fenders.

West Virginia Projects

(Continued from page 54)

Raw; Potomac Construction Co.;

Logan—6 mi. surface treatment U.S. Rt. 119 between Blair and Ethel; John S. Gillispie, Huntington;

McDowell—surface treatment, U.S. Rt. 52 from Johnny Cake to Roderfield; Adams & Tate Construction Co., Roanoke, $31,113;

Mingo—5.58 mi. surface treatment on U.S. Rt. 52 from Gilbert to Wyoming County line; John S. Gillispie, Huntington;

Putnam—5.68 mi. surface treatment on U.S. Rt. 35 from Plymouth to Eleanor; L. C. Hanna, Charleston;

Raleigh—6.181 mi. surface treatment on State Rt. 41 and U.S. Rt. 19 between Stanaford and Prince Bridge; A. A. Bostic;

Wyoming—12.755 mi. surface treatment on State Rt. 10 from Elmore to Mercer County line; Adams & Tate Construction Co., Roanoke.

New T. V. A. Power Plant

(Continued from page 42)

1932, the sales to industrial plants using large blocks of power are estimated to increase by about 500,000,000 kilowatt-hours over the 3,900,000,000 kilowatt-hours purchased during the last year of the war.

Total 1945 use of electricity in the T. V. A. area, including transmission losses and energy returned to the Aluminum Company for power generated at its dams, approximated 11,500,000,000 kilowatt-hours. Government estimates of the 1952 consumption read "the region now served will need an additional 8,000,000,000 kilowatt-hours, chiefly to meet the demands of the 144 municipal and cooperative systems and their 900,000 consumers."

The system's hydro generating capacity is being raised by about 40 per cent by installations under way at Tennessee Valley Authority dams and at three dams being built by the Corps of Engineers in the Cumberland River basin. Combined with seasonal secondary hydro-power, power from the New Johnsonville operation will add 3,000,000,000 kilowatt-hours a year to the dry-year output of the T. V. A. system.

The present T. V. A. system has about 450,000 kilowatts of steam generating capacity. The Wilson plant was taken over in 1933. Several steam plants were purchased from private utilities in 1933. Construction was started in 1940 on the Watts Bar steam plant. This now has an installed capacity of 240,000 kilowatts. When T. V. A. was created in 1933, about one-third of the generating capacity of the region was in steam plants. "Due to rapid construction of hydro plants, only partially offset by new steam capacity," Authority officials observe, "the proportion has dropped at the present time to one-sixth."

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Ruggedly built from the tougher steels, CLEVELANDS stand up under the roughest going, minimizing major repairs, and when field repairs are necessary they are quickly and easily made because of unit-type construction. A wide range of speed combinations, extreme maneuverability and abundant, smooth-flowing power assure maximum trench yardage in any given period. Contact your local CLEVELAND dealer for other CLEVELAND features.

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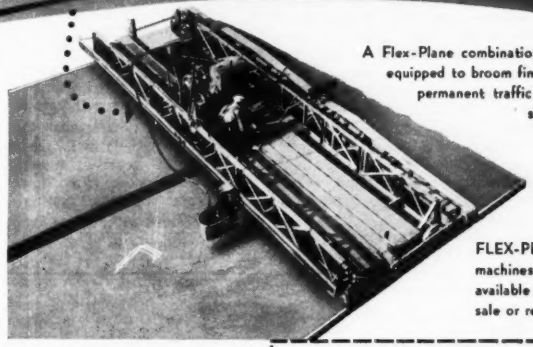

A Flex-Plane combination machine equipped to broom finish, install permanent traffic lines and spray cure.

FLEX-PLANE machines are available for sale or rental.

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*Address*_____

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Houston Industry Project

(Continued from page 41)

tic building at the third floor level on the South side.

On the north side of the warehouse, truck loading dock facilities are planned for the first ground floor level. On this side of the great structure, however, plans provide for railside unloading at the third floor level. The Katy at present has a line which serves industries at a high level to the north of the Bayou. This line, it is indicated, will be brought in at the third floor level to serve the north side of the building by means of elevated tracks directly over the truck loading docks.

Queried about the impact of such a great building project upon the development of the city generally, Mayor Oscar Holcombe said he thought it was "perhaps the boldest conception in advanced industrial design I have ever seen." Warren S. Bellows, president of the Houston Chamber of Commerce, predicted that not only Houston but all Texas would benefit from the successful completion of this great industrial project.

Wyatt C. Hedrick, the architect and engineer, described the project as "the most advanced thinking of the day along industrial lines." The 25-story office building, he declared, will be unique in that it will be the lightest building of its size ever constructed. "It will be an airy structure built of lightweight steel, aluminum and glass," he said, "with a fragile, luminous appearance, but it will be structurally as strong as any I've ever designed."

Mr. Hedrick's drawings, released by Salmon, revealed a tall shimmering building, apparently constructed of heat resistant glass from ground floor to roof, and set back in its upper stories. Both wings of the edifice and its center panels will be equipped with aluminum fins. It was estimated that a 25 per cent saving in the cost of air-conditioning would be achieved in the construction by reason of forethought in placement of the building in relation to the course of the summer sun, and by intelligent use of aluminum fins to avoid direct sunlight.

Mr. Hedrick said the building would be completely air-conditioned. It would have fluorescent and cold cathode lighting throughout, and electronically controlled elevators would speed traffic to all floors. "When this structure is completed," he declared, "it will serve as a model for our part of the country for years to come."

The ten-story warehouse building will dominate the landscape. Project sponsor Salmon, who for many years has specialized in industrial building, said "This is the ideal warehouse building. It has the equivalent of three ground floors, and access to every corner is easier than I have ever known. Each floor will have high ceiling clearances for maximum capacity. Our ventilating system will dehumidify the air. Heavy duty freight and passenger elevators will serve every floor, and our conveyor and other mechanical movement will be specially designed for our purposes."

There will be unlimited parking space in the warehouse area, Salmon said. "Moreover, between the office building and the warehouse we plan to install a complete inter-communication system, both telephone and pneumatic tube, so that warehouse tenants may maintain offices in the office building and still have instant contact in their warehouse operations," he declared. "We contemplate an eventual investment of something like $50,000,000; for that investment we propose to secure the most efficient operation in the country."

Wm. M. Blanton, executive vice president of the Chamber of Commerce, forecast a change in the nations thinking along industrial lines following the successful completion of the project.

Industrial Tractor Evolution

(Continued from page 39)

25 b.h.p. single cylinder gasoline-kerosene engine, weighed 28,200 pounds.

The 1917 International 8-16 showed the growing effects of automotive influence. This tractor had a four-cylinder kerosene engine of 16 b.h.p. at 1000 r.p.m., three speeds forward and one reverse. Weight only 3,300 pounds.

The strongest automotive influence in the tractor field was the Fordson, introduced to the American market in 1918. A picture of the Fordson shows steel wheels. Its power curve indicates the engine developed about 21.5 h.p. at 1200 r.p.m. This mass-produced tractor found its way into many industrial applications. It also inspired a great deal of allied equipment development and brought tractor-mounted machines into the picture.

The International Model 20, introduced in 1924, typifies the progress made in the middle twenties. It took over the industrial jobs which the Fordson lacked weight and power to handle. Its gasoline engine developed 30 b.h.p., the tractor weighed 4400 to 7500 pounds, depending on wheel and rubber tire equipment, and traveled at speeds up to 10 m.p.h.

The International I-30 introduced in 1932 illustrates the transition from solid to high pressure pneumatic tires in the early 1930's. This tractor with single rear tires had nearly the same dimensions as the Model 20, but kept pace with the industry trend toward more power. It had four speeds up to 10 m.p.h. and a gasoline engine that developed 39 b.h.p. at 1150 r.p.m.

The ID-40 was the first industrial diesel-powered wheel tractor. Introduced in 1936 with a 52 b.h.p. 4-cylinder diesel, it helped pioneer the industrial trend to diesel power. You will note also that it has low-pressure type pneumatic tires, such as had already begun to revolutionize the farm tractor industry.

You should now have sufficient background to appreciate the progress represented in the current industrial wheel tractors. For convenience we have divided them into six types:

1. Standard all-purpose tractors
2. Shop tractors
3. Highway mower tractors
4. Earthmovers—4-wheel
5. Earthmovers—2-wheel
6. Rubber-tired Bulldozers

Representative of the standard all-purpose machines are middle-size current models of standard all-purpose industrial wheel tractors as made by Case, International, Minneapolis-Moline and Oliver. Each of the manufacturers builds several models from which to choose. For example, International has two sizes of diesel and three sizes of gasoline-powered tractors of this type.

Appearance has greatly improved. Transmissions have from 4 to 6 gears forward with road speeds up to about 17 m.p.h. Engine horsepower ranges from 25 to 63 b.h.p. at conservative governed engine speeds of roughly half that of automobiles and trucks. These tractors power a variety of allied equipment and give users the value inherent in mass production because they contain many parts common from corresponding sizes of agricultural tractors.

Units made by Clark, Mercury and Buda-Hebard are exemplary of the shop tractors. The three makes shown are each available in several sizes and modifications. This type grew up from the Ford Model "T" days more in the truck field than in the traction engine. You will see these nimble tractors hauling trailers and working in factories, around railroad stations and docks.

Tractors in the small industrial and highway mower class made by manufacturers in the midwest area include the Allis-Chalmers B, Case VAI, International Super A, and LeRoi-Centaur shown. Ford, Worthington, and others. Most can also be modified for small front-end loaders, air compressors, sweepers, snow plows and similar equipment.

Representative models of current tractors in the 4-wheel rubber-tired earthmover class are those made by Caterpillar, Euclid, and M-R-S. The tractors are available in various sizes, having diesel engines of from 115 to 275 b.h.p. Some have road speeds over 30 m.p.h. Caterpillar and Euclid tractors carry the front end weight of the wagon or scraper on the tractor. Hydraulic down-pressure transfers part of the pulled vehicle weight to the M-R-S rear drive wheels at slow speeds as needed for traction.

The 4-wheelers can be independent regarding allied equipment, but users have favored them mainly for faster time cycles with big capacity wagons. Many contractors prefer two-wheelers for long-haul scraper work. The picture, of course, may change and is not complete without crawler tractors for pioneering, pushing, loading and moving earth on the shorter hauls and under adverse conditions.

R. G. LeTourneau introduced the two-wheel rubber-tired earthmover tractor in 1938. The original clutch-steered type was built in several sizes, the last and most popular being the Super "C" Tournapull. This machine was powered by a 150 b.h.p. diesel and shown with 12-yard

(Continued on page 60)

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Industrial Tractor Evolution

(Continued from page 58)

struck capacity scraper, weighed 31,000 pounds. One of LeTourneau's latest is the push-button electric-steered model. Current Tournapulls have top road speeds of 15 to 25 m.p.h., diesel engines of 100 to 240 advertised b.h.p., and other features which will be reviewed later in our discussion of trends in new models.

At least four other manufacturers are interested in two-wheel rubber tire tractor development. They are Caterpillar, Heil, LaPlant-Choate, and Wooldridge. The tractors are big units powered by diesel engines of from 150 to 225 b.h.p. All have positive hydraulic controlled steering with various individual features and speeds to about 25 m.p.h. Two-wheel tractors with scrapers have an average weight of nearly 200 pounds per engine brake horsepower when empty and approximately double this weight when loaded.

Among the newest comers into the industrial wheel tractor field are the big rubber-tired bulldozers. The largest size appeared in the 1948 Road Show in Chicago, equipped with a butane-propane burning engine with an advertised rating of 750 b.h.p. Other sizes are driven by diesel engines with advertised ratings of 180 to 300 b.h.p.

LeTourneau dozer-tractors change direction much like a crawler tractor, being equipped with an air-controlled steering clutch and brake in the final drive to each set of tandem wheels. The LaPlant-Choate has four-wheel drive with four-wheel hydraulic steer. Transmissions give road speeds to 15 or more m.p.h. with 2 to 4 speeds in reverse. While the time cycles look good on paper, traction conditions may introduce considerable variance in performance.

This quick review of industrial wheel tractor development gives you some idea of the great progress made from the beginning to date. The trend is obviously to more power per pound of tractor weight, and to high-speed automotive diesel engines, particularly in the earth-mover class. Advantage is being taken of the trend toward superimposed allied equipment for traction weight and better maneuverability.

(To Be Continued In A Later Issue)

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using a Rogers Model D-35-D and a Rogers Pole Type Trailer loaded with 80,000 lbs. of steel tank 67 feet in length. The conventional trailer mounts a fifth-wheel type of bolster which supports the front of the load and tows the pole trailer which carries the rear of the load.

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South's Awards High

(Continued from page 9)

housing legislation, the National Association of Real Estate Boards cited defeat of public housing legislation in several states and asked "from just whom and where the so-called 'mandate' for this federal bill actually comes." Calvin K. Snyder, secretary of the Realtors' Washington committee, made the query.

He stated that communities and states are in much better financial shape to undertake slum clearance and housing projects, "if they want them" than is the federal government. The $1,721 per capita debt of the federal government and the $25 and $102 per capita debts of the state and local governments were cited in the argument against federal public housing.

Word from the nation's clay tile contractors reveals that the need for more storage space in the bathroom is causing a boom in built-in features such as tiled counters and dressing tables and that more than 90 per cent of the country's new urban homes will have either a shower over the bathtub or a separate shower stall.

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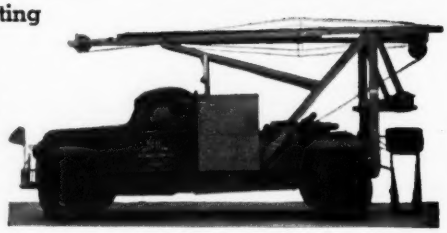

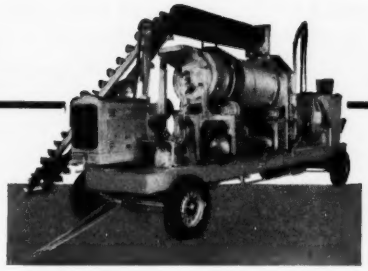

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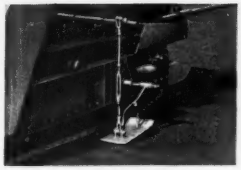
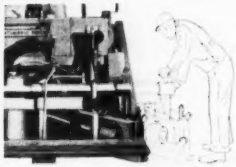


Automatic Grade Matching

12' Equalizing Runners



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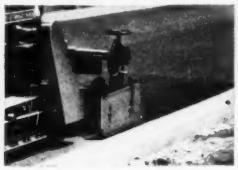
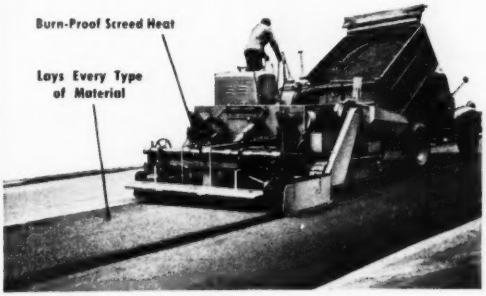


Lays Flush to Curbs



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	May, 1949 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Five Months 1949
Alabama	$ 586,000	$ 2,625,000	$ 4,392,000
Arkansas	8,100,000	10,693,000	9,560,000
Dist. of Col.	.....	.....	.....
Florida	642,000	350,000	6,764,000
Georgia	123,000	400,000	2,131,000
Kentucky	1,700,000	2,000,000	2,038,000
Louisiana	5,871,000	5,200,000	13,858,000
Maryland	577,000	728,000	8,533,000
Mississippi	535,000	695,000	1,768,000
Missouri	550,000	48,433,000	2,351,000
N. Carolina	969,000	12 630 000	22,405,000
Oklahoma	400,000	10,833,000	2,796,000
S. Carolina	17,024,000	5,150,000	22,052,000
Tennessee	13,573,000	8,405,000	87,779,000
Texas	19,159,000	24,038,000	55,837,000
Virginia	347,000	5,000,000	1,344,000
W. Virginia	.....	50,000	1,250,000
TOTAL	$70,156,000	$137,230,000	$244,778,000

ROADS, STREETS, BRIDGES

	May, 1949 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Five Months 1949
Alabama	$ 454,000	$ 2,740,000	$ 879,000
Arkansas	247,000	.....	331,000
Dist. of Col.	.....	.....	4,086,000
Florida	184,000	1,670,000	3,173,000
Georgia	3,168,000	720,000	9,618,000
Kentucky	2,273,000	9,840,000	9,398,000
Louisiana	2,720,000	1,710,000	13 904,000
Maryland	4,280,000	20,570,000	20,591,000
Mississippi	1,208,000	76 ,000	3,332,000
Missouri	1,215,000	2,2 0 000	5,904 000
N. Carolina	1,953,000	1,085,000	9,886,000
Oklahoma	3,994,000	2,970,000	12,501,000
S. Carolina	3,811,000	400,000	10 74 ,000
Tennessee	661,000	46,300,000	8,871,000
Texas	8,223,000	5,660,000	47,174 000
Virginia	2,8 2,000	1,820,000	8,889,000
W. Virginia	587,000	1,890,000	2,731,000
TOTAL	$37,798,000	$100,360,000	$172,009,000

PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

	May, 1949 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Five Months 1949
Alabama	$ 2,700,000	$ 1,475,000	$ 8,667,000
Arkansas	143,000	1,521,000	1,408,000
Dist. of Col.	.....	3,000,000	775,000
Florida	19,388,000	9,475,000	66,835,000
Georgia	6,529,000	1,910,000	21,909,000
Kentucky	.....	.....	1,238,000
Louisiana	3,148,000	2,545,000	14,935,000
Maryland	2,924,000	1,329,000	21,910,000
Mississippi	1,855,000	4,760,000	4,394,000
Missouri	386,000	4,580,000	6,699,000
N. Carolina	4,796,000	5,057,000	11,135,000
Oklahoma	1,466,000	4,100,000	6,779,000
S. Carolina	1,687,000	305,000	5,373,000
Tennessee	3,947,000	1,450,000	14,956,000
Texas	13,033,000	46,255,000	99,922,000
Virginia	645,000	1,875,000	6,045,000
W. Virginia	.....	50,000	395,000
TOTAL	$62,737,000	$89,678,000	$293,395,000

PUBLIC ENGINEERING

(Dams, Drainage, Waterworks, Sewers, etc.)

	May, 1949 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Five Months 1949
Alabama	$ 433,000	$ 1,860,000	$ 2,387,000
Arkansas	1,783,000	3,780,000	4,220,000
Dist. of Col.	50,000	440,000	1,034,000
Florida	10,838,000	1,9 5,000	17,2..8,000
Georgia	1,107,000	2,832,000	6,377,000
Kentucky	528,000	1,340,000	3,866,000
Louisiana	4,391,000	6,782,000	18,550,000
Maryland	695,000	680,000	7,459,000
Mississippi	2,071,000	3,804,000	6,672,000
Missouri	2,244,000	6,390,000	7,506,000
N. Carolina	944,000	5,964,000	5,959,000
Oklahoma	556,000	2,963,000	9,255,000
S. Carolina	1,054,000	1,300,000	3,737,000
Tennessee	1,431,000	1,8 0,000	11,050,000
Texas	8,808,000	35,698,000	41,605,000
Virginia	3,115,000	2,030,000	8,152,000
W. Virginia	.....	400,000	85,000
TOTAL	$40,968,000	$80,008,000	$155,142,000

PUBLIC BUILDING

(City, County, State, Federal; Hospitals; Schools)

	May, 1949 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Five Months 1949
Alabama	$ 1,401,000	$ 7,550,000	$ 12,126,000
Arkansas	962,000	3,940,000	3,875,000
Dist. of Col.	9,433,000	1,270,000	35,132,000
Florida	3,750,000	1,495,000	23,249,000
Georgia	2,438,000	4,145,000	11,543,000
Kentucky	.....	3,569,000	2,210,000
Louisiana	3,844,000	16,612,000	15,569,000
Maryland	6,568,000	20,584,000	19,' 09,000
Mississippi	2,067,000	14,615,000	13,3 2,000
Missouri	890,000	2,425,000	5,093,000
N. Carolina	4,468,000	4,950 000	20,997,000
Oklahoma	2,778,000	836,000	12,232,000
S. Carolina	2,149,000	1,510,000	5,833,000
Tennessee	2,146,000	3,220,000	19,440,000
Texas	15,373,000	22,418,000	61,811,000
Virginia	6,318,000	8,177,000	20,661,000
W. Virginia	.....	180,000	541,000
TOTAL	$64,565,000	$117,496,000	$283,503,000

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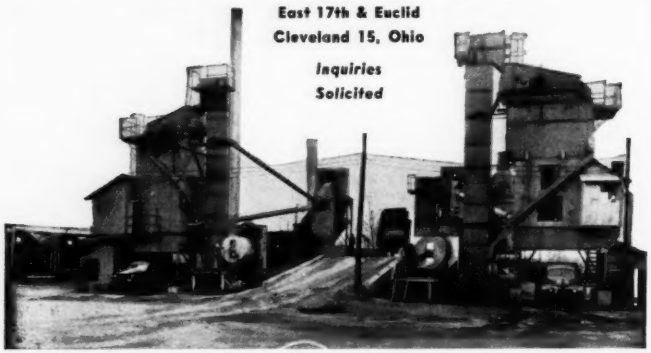

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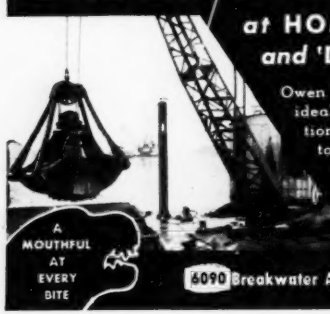

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LACLEDE

LACLEDE STEEL COMPANY
St. Louis, Mo.

An Important Story

(Continued from page 35)

they say, "Here is a machine which makes it possible to make ten times as many parts as a man could do with hand tools," they also say, "It makes the operator's work easier and he gets paid many times what he would if the parts had to be made by hand."

There are many other things he knows about the plant, too. He knows, for example, what many machine tools cost and who put up the money to buy them. He knows that the owner of tools is entitled to a fair return on his invested savings. And he uses this, and a great deal of other information, as he sees fit. He does not learn his story word by word and then at the proper place "speak his piece." He tells it in his own words, having learned it through countless trips with his supervisor, study of available printed material, trips by himself and through every other sensible channel. He is sincere, friendly, interested and patient, because he was selected for those virtues.

But, try as he does, he cannot do the impossible. He can show visitors many things and he can tell them much in the plant, but he cannot be an expert in the field of industrial economics and, thus, he cannot give visitors the broad general picture which we have come to feel so important.

We attempt to answer correctly all corrections asked by visitors, whatever their nature, for we think they want to know whether or not we are serving them efficiently. They want to know that we are giving them what they want at a price they feel is right.

Well, we want to tell them. And we have found one way to do it. We have just produced a sound-color slide presentation which answers some questions we know they want answered and shows them some things they might not have considered.

Briefly, the two-by-two inch Kadochrome slides illustrate a recorded talk which welcomes visitors, saying that we want them to enjoy their visit and so we are going to tell them of a few things they'll see and a few they won't. We show them a part of the color-conditioned plant (it's painted in pastel shades throughout), we show them machine tools and tell them what a fixture is and what it contributes to mass-production and, so, to their higher living standard.

The slides and talk cover the fine training and apprentice courses, the safety of the plant, the transportation system, the foundry, and many other things visitors will see. But, the presentation does much more than that. It tells of the invisible man in the plant, the man who stands at the elbow of each employee, the fellow who provided the thousands of dollars worth of tools which make his job possible.

The story includes a slide or two on that important guy, the real boss—the customer, who really decides what we shall build and how much of it. Considerable emphasis is placed on the employees visitors will see. "But even more important than the *things* you will see," says the speaker, "will be the *people* you will see. . . . We can and do have fine machines, good buildings and excellent materials, yet proper use of all these calls for people who have skills and know-how and will put these talents and abilities to work."

One of the most important points made in the presentation is the importance of the Company to its community. The $84 million put into circulation in the area last year is pictured and described. Visitors are told of the $71 million in wages and the $13 million in local purchases. And profits, where they come from, where they go and the reasons they mean prosperity to a community and a nation get a share of attention. As we said before, it is vitally important that people know that America has succeeded mainly because it has solved the problem of supplying more of the things that people want, at the right price. It has succeeded because there have been incentives for success—the incentives of prosperity and freedom.

People must know the truth if they are to give support to private enterprise—if they are to indicate a preference at the polls for those who believe in the soundness of our way against the ways of state-controlled countries.

At Caterpillar, we think we may have found one small way to add to the knowledge of visitors, a few at a time. We believe the method is effective. Visitors seem to like it. And we are certain that we are trying to lift a little where a lot of lifting is needed.

Facilities Expanded at Reynolds Plant

A one-third increase in capacity will result from the expansion of Reynolds Metals Co. wire, rod and bar mill at Listerhill, Ala. The enlarged mill will soon be in full operation, David P. Reynolds, vice-president and manager of the general sales division, said in Louisville recently. "The expansion of these facilities accompanies the transfer of certain equipment formerly located at our Plant 7 in Louisville," Mr. Reynolds stated.

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Pipeline Project Started

(Continued from page 5)

Reviewing the accomplishments of the company's land-leasing and right-of-way department, Mr. Ingham reported that 65 per cent of the rights along the entire route had been secured by April 15, with a major portion obtained in Tennessee, Kentucky and Indiana.

Surveys have also been made, Mr. Ingham said, of all multiple line river crossings along the route, and detailed drawings prepared. Route of the line will take the pipe under 15 rivers, including four 16-inch lines under both the Mississippi and Ohio Rivers.

As for the vast quantities of materials and supplies needed for the construction, Mr. Ingham said that over half the pipe had arrived by May. Some 389 miles of 26-inch pipe are now stored along the right-of-way, bringing to 452 miles the total pipe received.

In addition to the steel, 5,699 tons of enamel have been delivered for use in protecting the pipe once it is in the ground.

N. C. & St. L. Program

(Continued from page 40)

The Nashville, Chattanooga & St. Louis is also planning to reconstruct the Holmes Avenue Overpass at Memphis, Tenn., replacing an old timber structure with a modern three-span continuous slab on a steel I-beam resting on concrete pile bents. Construction is scheduled to start in the early spring and is to be done by Railway forces at a cost of $75,000. The City of Memphis is to build the approaches.

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1—LeTourneau 15-yard. Pan. tires 18" x 24".
1—HD-10 Allis Chalmers Tractor with Baker Hydraulic bulldozer, 10' blade.
1—412 Adams Road Grader, late model, pneumatic tires. Rear 1300 x 24; Front 700 x 24.
1—HD-14 Allis Chalmers Bulldozer, blade also equipped with double drum power take off.
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